

THE SPIRIT OF NATURE STUDY

EDWARD F. BIGELOW

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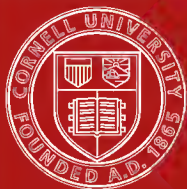
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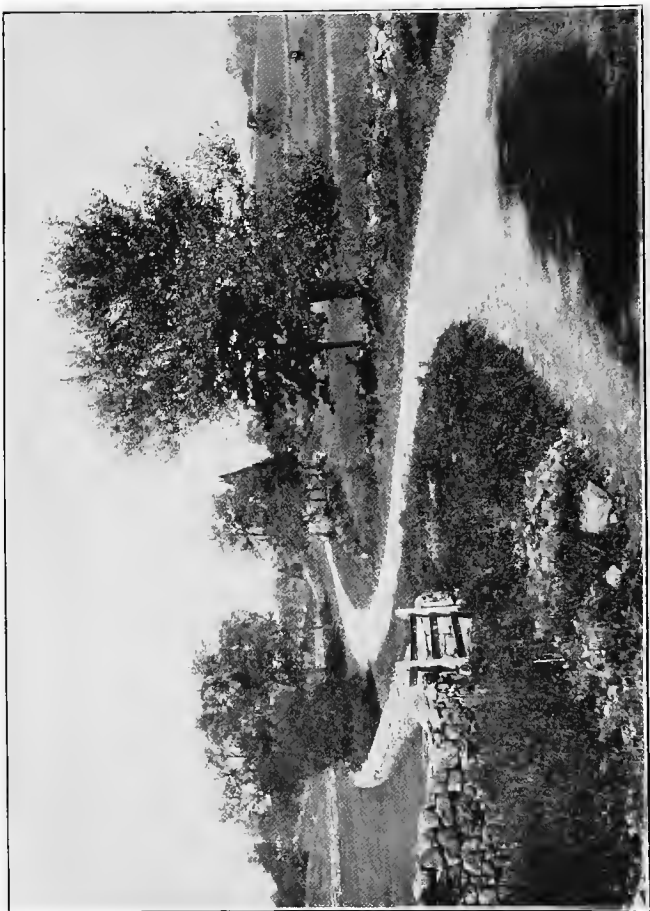
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THE SPIRIT OF NATURE STUDY



THE SPIRIT OF NATURE STUDY

A book of Social Suggestion and Sympathy
for All Who Love or Teach Nature

By ^{Allen}
Edward F. Bigelow

The how is worth more than the what



New York
A. S. Barnes & Company

1907

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CONTENTS.

THE CHILD OR YOU	I
SISSIES AND TOMBOYS	14
I DON'T KNOW	27
"ALL THE WORLD LOVES A LOVER" .	45
THE WHITE WATER LILY AND WHAT IT REPRESENTS	51
THE EDUCATIONAL RABBIT	60
"WHERE ART THOU?"	67
THE "TRIMMINGS"	77
"WHAT DID YOU GET?"	88
RETURNING WITH A LOAD OF GOOD THINGS	91
SHINGLE YOUR ROOF	98
WHAT HAPPENED IN A CITY BACK YARD	103
THE CRAVING FOR THE ROUGH . .	111
HOW PITIABLE THEIR CONDITION . .	119

CONTENTS

HUNTING AND FISHING	121
LOVE OF NATURE AND LOVE OF MOTHER	132
“WELL, THAT’S THE LIMIT”	138
THE FUN OF BEING A NATURALIST.	150
THE BEAUTY OF THE COMMONPLACE	166
WAS THE BEAUTY OF THE BOUQUET GENUINE OR HYPOCRITICAL?	171
THE NATURAL HONEY-BEE	172
THE FIRE OF LOVE	181
THE BROOK AND THE STONE WALL VISTA I	186
VISTA II	189
VISTA III	193
VISTA IV	200
VISTA V	210
VISTA VI	217

LIST OF ILLUSTRATIONS.

EVERY ROAD CURVE IS AN INTERROGA-
TION: WHERE WILL I LEAD
YOU? *Frontispiece.*

THE SPIRIT OF NATURE SEEMS TO
HOVER LIKE A FAIRY AROUND THE
WATERFALLS 1

RECIPE FOR THE REAL SPIRIT: MIX
BOYS, NETS, PAILS AND POOLS . . . 16

YOUNG FOLKS AND THE OLD OAK . . . 32

WITH JOHN BURROUGHS ON THE PEAK
OF "THE MOUNTAIN," NEAR SLAB-
SLIDES 48

"THE DEAN OF AMERICAN NATURAL-
ISTS," JOHN BURROUGHS, AT SLAB-
SIDES, WITH A PARTY OF YOUNG
NATURALISTS 64

A NATURE STUDY CAMP 80

SPIRIT OF NATURE STUDY

PICKING VIOLETS—"GROUNDLINGS" OF THE RIGHT KIND	96
HALF THE FUN OF AN OUTING IS THE MUTUAL HELPFULNESS	112
SOMETIMES "THE REST," AS IN MUSIC IS THE MOST EFFECTIVE PART . .	128
A CONTEST OF EYES AND EARS . . .	144
THE FASCINATIONS OF THE SEA-SHORE	160
THE HARMONY OF THE BEAUTIFUL .	168
THE VEIL OF THE SPIRIT OF NATURE .	176
THE BROOK AND THE STONE WALL IN THE LOWLANDS	192
LACE-EDGED "SPREADS" ON STONE TABLES OF THE BROOK	208

*Thoreau said there is a little of spring in all
seasons. So there should be a little of
“the spirit of Nature Study” in all
other studies.*

THE SPIRIT OF THE CHILD.

Children can be made to do many things that they ought not to do and that lie beyond them. We all need to go to school to children.

*A little child sat on the sloping strand
Gazing at the flow and the free,
Thrusting its feet into the golden sand,
Playing with the waves and the sea.*

*I snatched a weed that was tossed on the flood
And unraveled its tangled skeins;
And I traced the course of the fertile blood
That lay deep in its meshed veins;*

*I told how the stars are garnered in space,
How the moon on its course is rolled;
How the earth is hung in its ceaseless place
As it whirls in its orbit old.*

*The little child paused with its busy hands
And gazed for a moment at me;
Then it dropped again to its golden sands
And played with the waves and the sea.*

Prof. L. H. BAILEY.

THE SPIRIT OF THE NATURALIST.

I remember the first man I ever saw sitting still by himself out of doors. What his name was I do not know. I never knew. He was a stranger, who came to visit in our village when I was perhaps ten years old. I had crossed a field and gone over a low hill (not so low then as now), and there, in the shade of an apple tree, I beheld this stranger, not fishing, nor digging, nor eating an apple, nor picking berries, nor setting snares, but sitting still. It was almost like seeing a ghost. I doubt if I was ever the same boy afterward. Here was a new kind of man. I wondered if he was a poet! Even then I think I had heard that poets sometimes acted strangely, and saw things invisible to others' ken.

I should not have been surprised, I suppose, to have found a man looking at a picture, some "nice," high-colored "chromo," such as was a fashionable parlor ornament in our rural neighborhood, . . . but to be looking at Nat Shaw's hayfield and the old unpainted house beyond—that marked the stranger at once as not belonging in the ranks of common men. If he was not a poet, he must be at least a scholar. Perhaps he was going to be a minister, for he seemed too young to be one already. A minister had to think, of course (so I thought then), else how could he preach? and perhaps this man was meditating a sermon. I fancied I should like to hear a sermon that had been studied out of doors.

BRADFORD TORREY in "The Clerk of the Woods."

THE SPIRIT OF NATURE.

There is much beyond all that has ever yet been imagined. As I write these words, in the very moment, I feel that the whole air, the sunshine out yonder lighting up the ploughed earth, the distant sky, the circumambient ether, and that far space is full of soul-secrets, soul-life; things outside the experience of all the ages.

If any imagine they shall find thought in many books, certainly they will be disappointed. Thought dwells by the stream and sea, by the hill and in the woodland, in the sunlight and free wind, where the wild dove haunts.

As a few strokes from a loving hand will soothe a weary forehead, so the gentle pressure of the wild grass soothes and strokes away the nervous tension born of civilized life.

—RICHARD JEFFERIES.

THE SPIRIT OF NATURE SEEMS TO HOVER LIKE A
FAIRY AROUND THE WATERFALLS.

"The eye may well be glad that looks
Where Pharpar's fountains rise and fall;
But he who sees his native brooks
Laugh in the sun, has seen them all."

—WHITTIER.



THE SPIRIT OF NATURE STUDY

THE CHILD OR YOU?

IN all this talk about nature study and its educational value, there are some puzzling aspects. Chief among these is the fact that frequently the nature study chosen for the child is a misfit—a something adapted to someone else and forced upon the reluctant victim, or the denial of what the child desires, with nothing supplied as its substitute. It is in such cases either a second-hand, ill-fitting garment or else the poverty of forced nakedness.

To illustrate: Not long ago I had, as a most enthusiastic member of one of my classes, a boy about ten years of age. He manifested an eager, sympathetic interest in the various natural objects which I brought to the attention of the class. But I could

THE SPIRIT OF NATURE STUDY

easily see that it was only sympathetic. He could appreciate my enthusiasm for my favorite pursuits, because he had a love for his. He balanced my enthusiasm by his. And this was just what I desired. I did not expect him to be interested in everything that pleased me. On the contrary, I constantly urged specialization, even among these youngsters. You work with your choice, be it your pony, goat, dog, pigeons, rabbits, fancy mice; in fact, with whatever you desire to keep, and of which you make a specialty. Enter lovingly into the care of it and learn all that you can in regard to it, was my advice. Then I urged each one to tell the others what he had observed.

"May I keep just what I wish to?" was the inquiry, in substance, from several of the bright-eyed boys.

"Yes," I said, "it is your interest, not mine, that I am consulting."

The next week, upon visiting this school, I was met at the door by several boys. "I've got something; I want to show it to you." I ascertained that several had been out in the woods and fields on a "still hunt" for "specimens." There were salamanders, frogs, and turtles innumerable. One had obtained

THE CHILD OR YOU?

a pair of screech owls, another a flying squirrel, and others still more unusual objects.

"Say, I want to speak to you away from the other boys," said one of the pupils, as he pulled at my coat. I followed him to the end of the hall. There he whispered, "I went to S——'s zoological store and I've got something up in my room that I want to show you. They won't let me have it around here. I had to hide it. Boys and some of the masters said they would kill it. It's a beauty. I want to surprise you. I know you will like it."

So I went up to my room (it was a boarding school), and in a few minutes there was a scurry of tip-toeing steps down the hall and an eager tapping at the door.

"Let me in quick."

I opened the door and in he came. "I had to look out for the other boys." He sat down on the edge of my bed, thrust his hand into his vest and began to pull.

"I tell you he's a beauty, all curled up here except what's around my arm. There's the other end of him."

So saying he took his hand out of his vest and pointed to the end of his left coat-sleeve. Then he resumed the pulling.

THE SPIRIT OF NATURE STUDY

To my surprise, and I must confess, somewhat to my distaste (for I had never been a very enthusiastic herpetologist), and not a little to my amusement at the little fellow's affectionate tuggings, he pulled out a king snake more than four feet in length, longer, indeed, than he was, and landed it admiringly and triumphantly on my bed.

"There, he exclaimed, as he passed his hand lovingly down the snake's body, and gave a slight tug at the tail as the head was wriggling under my pillow, "ain't he a beauty?" and he went on eagerly to say: "I'm so glad you said that we could get anything we wish, for I just love snakes. I paid a dollar for it. Got it cheap. Don't you think so? The other boys bought covies, and a pair of white rabbits, and one has a pair of white mice, and—but my snake beats them all. S—— said it is harmless, 'just as gentle as a kitten,' he said. Look at the markings. Ain't they beauts? Seen his head? Let me show you. Say, ain't he nice? See here. Now I'll show you how I do it. . . I can wind him four times around my neck. And look, quick, here's another thing I have taught him to do. . . ."

It was a first-class exhibition of snake-

THE CHILD OR YOU?

charming. It is not necessary to go into details and describe all the things the boy and the snake did, nor to tell of my rather reluctant efforts to handle the pet and to share in the boy's enthusiasm. His interest was genuine. It roused him as nothing else could have done. I let him play with the snake on my bed to his heart's content, while I sat admiring his interest and his fearlessness.

"You see, I don't have many chances to show what I can do with him—just to a few fellows that like snakes, up in my room—and mother won't let me keep him at home—I like to show what I can do with him. Ain't he great? Ain't he a beaut?"

It was the joy of telling, of expressing, of sharing his joy with another person. It was one of the most delightful evenings that I ever spent at the school, and I don't care much for snakes, either, but I do like boys.

His joy was short lived.

The next week he came to me with tears in his eyes, and grasping my hand, he said: "I carried him home, and when I was at school they told the coachman to kill him."

He could say no more. His love had been genuine, so was his grief. I saw that he had loved that snake even more than I had imag-

THE SPIRIT OF NATURE STUDY

ined. And as I had genuinely shared in the happiness that his pet had given him, I could do no less than to share in his sorrow. I comforted him to the best of my ability, and longed to thrash the coachman. Perhaps you say that the coachman was not to blame. He obeyed orders. Yes, I said that later on, but there are times when one goes toward most conspicuous causes by the most direct route, and doesn't linger for subtle analysis or abstruse philosophy.

Two or three weeks afterward I met his mother. She said, "I wish you wouldn't encourage Arthur to keep snakes. I don't like snakes, so I told the coachman to kill the horrible creature that he brought home."

What did I do? Nothing. There are occasions when one is like the man in the courtroom of whom I have heard. The judge had imposed a fine of five dollars for contempt of court. The man meekly replied: "Your Honor, I beg leave to submit that there is some mistake about this. I have expressed no contempt for this court; on the contrary, I have tried to conceal my sentiments."

So the situation demanded that I meekly say, "I beg pardon, but I had supposed that

THE CHILD OR YOU?

I was trying to assist in the *development of the boy*, not of you . . . Excuse me, but I have something to say to those boys over there."

It requires no stretch of the imagination to hear some teachers who read this, say, "I think she did right. I don't like snakes either and I should not want my boy to have snakes about the house. I, too, would have told the coachman to kill it. The teacher ought to have interested him in something else that is better."

And I say to you, O reader, be you teacher or parent, who cares what you like or do not like to have about? You are trying to put into the boy's mind mental furniture of the same material and pattern that ornaments yours. You are insisting in having him develop along exactly the same course by which you have been developed, to think the same thoughts, and to be an exact counterpart of you. It is possible that he may be an improved and corrected edition of you. He may be a trifle superior even to you. Have I good authority for saying I don't care what you think, nor how you were developed, nor what you like, nor what you are? Mother Nature ignores you.

THE SPIRIT OF NATURE STUDY

She says, "Never in all the ages did I produce another physical or mental individuality like yours, and never in all the eternity of creation will I ever duplicate it." She is evidently "sick of her job," yet you insist in being superior to nature and in holding yourself up as the perfect model, and you shout, "I don't like," as if anyone cares what you like or dislike. You are adult and are beginning to go down hill. The child is a later and revised edition. Nature is progressing toward perfection, and the child even now is superior to you. When you come to love your "snakes," to bury your likes and dislikes, not because you dislike snakes less, but because you love the child more, you will understand what is really meant by the expression, "Nature Study from the standpoint of the child."

Before a large audience at the Connecticut Chautauqua I told this story of the boy and his pet, and of the assassins that destroyed his snake, and retarded his mental development. At the close of the lecture a tall young man came up in the crowd, gave my hand a cordial grasp, and said:

"You struck it right that time. My teacher thought she was a great nature

THE CHILD OR YOU?

study teacher; she posed as such, at least. She was always picking flowers and pulling them to pieces, and talking about stamens and stigma, and corolla, and such things. One day I carried to school my box of spiders. I never was much interested in anything else, but she shuddered and grew pale, and said, 'Ough! I don't like spiders. Do take them away. I can't bear to look at them.' I carried them away. I guess we are even. I never can get over the impression which I received from that woman's dislike of my pets. To this day I almost shudder when I hear anyone talk of pulling a flower to pieces—I guess it's the association. 'Love me, love my dog,' you know."

He gave my hand another grasp and went on. I didn't have even an opportunity to reply, but I understood.

I had planned to end this article with the foregoing, although other exasperating and pitiful examples of the adult forced on the child, crowd upon my mind. I had said to myself I will not record more of these outrages, so had laid aside my manuscript. But I am compelled to mention two more experiences of the kind.

THE SPIRIT OF NATURE STUDY

The door-bell had just rung. I listened to learn who had called. The maid came to the top of the stairs, and said:

"A lady and a little boy to see you, sir."

I found in the hall awaiting me a fair-faced, well-dressed lady, carrying a covered basket, and holding her little son by the hand. His face bore a sorrowful expression.

The mother said, "I know you have many pets, but I thought you might like another. I have a white rabbit in my basket, given to my son by a friend who is interested in 'such things' (sic) and I don't want him."

I turned to the boy and said, "Do you want to give away your pet rabbit?"

"No, sir," tearfully, "but mother says we have no place to keep it and doesn't want——"

"All right, if that is all, I can fix it. I have an unoccupied hutch. I will send it right over. You can keep a rabbit out-of-doors in the winter, you know, if you have a good hutch. It is not at all necessary to have a room in the house. I'll tell you all about——"

"But, sir," interrupted the mother, "I don't want the rabbit. I don't see why Uncle William gave it to him. He knows

THE CHILD OR YOU?

I don't like to feed such things and have them around."

It was a queer kind of conversation, a triangular kind. The mother talked to me and I addressed all of my remarks to the boy. His face had brightened, as if with a ray of hope.

"I judge that you are fond of rabbits."

"Yes, sir, very. I like them better than anything else, but mother doesn't want me to have one. I spend all the time over at Uncle William's, and he——"

"I think I must be going. Sorry you can't take it, sir. We must dispose of it somewhere else."

I suppose she went home that Saturday evening and taught the Sunday-school lesson to her boy and told him that all good boys go to heaven, and all bad boys keep rabbits. One thing, however, puzzles me. I wish she would enlighten me as to the final and eternal fate of such mothers.

Again I laid the manuscript aside, and again I have taken it up. Yesterday I went to New York, and one more example so impressed me that I must record it. It is strange that when a topic is uppermost in

THE SPIRIT OF NATURE STUDY

mind, everything seems to point toward it and illuminate it.

On the train was a tall, strong, angular woman with a florid face. She carried a basket and tried to lead three children, ages, I should judge, from about four to eight. The youngest, a pretty little girl, was pushed into the seat by the crowd in the aisle. Her mother reached back, took the child by the arm, and literally dragged her through the crowd.

"Come on here, you imp, you are so slow, Annie. What a bother you are. Why don't you keep up with us?"

Then the mother set the basket down on the platform, seized the weeping child, shook her violently, jerked her hat forward, and with her apron mopped little Annie's streaming face.

"You must learn not to be so slow—I could have got off that car twice to your once. Couldn't you see that all the people wanted to get out?"

"Yes, you old virago," I said to myself, "perhaps I could have got off three or four times to your once. I can walk faster, and I am somewhat stronger than you. I should have liked to get off at least twice. Once

THE CHILD OR YOU?

as I did, a little ahead of you, when I saw your disgraceful performance. Then I should have liked to go back, to grab you by a wrist, and make you skyrocket for that door. Come on here, you old hag, I set the pace, not you; don't you see this is the pace at which we got off, mine, not yours. There you are, landed in a heap, and serves you right. That's something like. Now you understand it is my pace that governs."

But I must stop, for my indignation is stimulating my pace at too active a speed.

SISSIES AND TOMBOYS

ALL truths are not whole truths, nor are all lies exempt from a basis of fact. Few laws, if any, are so general as to require no exceptions; even axioms are not self-evident in all cases. The biggest lies have thinkable or possible conditions, and the most imaginative novel ever written has a certain foundation in actual experience, although idealized almost beyond recognition.

No human being has fallen so low as to be without all goodness; and though there are many lovable and angelic men and women, every one, both literally and figuratively, must make changes in his apparel when he becomes so good that he feels his wings beginning to sprout. Dr. Jekyll and Mr. Hyde continue in business at the old stand. The partnership will never be dissolved; the most that can be hoped for is a struggle as to which shall be senior and controlling.

SISSIES AND TOMBOYS.

The naturalist finds that all positives have a negative. The wisest of ants are the biggest fools—when you look for the foolishness; and the dullest “clod-hopper” toad may have to his credit a lot of brilliant doings, even reasonings, and clever tricks.

I am not going to argue that we want our boys to be sissies, nor our girls to be tomboys—nor to denounce the characteristics that often entitle them to those nicknames among their schoolmates. Sugar by the mouthful and acid by the glassful are not agreeable, but a little of both in a summer drink make a pleasing combination. A boy wholly or predominatingly a sissy, or a girl a tomboy—would be unbearable and intolerable. But a real boy, or a really whole-souled girl is nicely flavored by a fair degree of tomboyishness, or sissyness. Or, perhaps, it would be better put if I should say that they would be nicely flavored by the characteristics of healthy heartiness and loving gentleness, which the terms tomboy and sissy of the old time vernacular maligned and misrepresented. Less and less frequently nowadays do we hear applied to girl or boy these derisive terms, and more and more do

THE SPIRIT OF NATURE STUDY

we see commended and encouraged under other phrases the qualities which our fathers and mothers denounced.

It is not much more than a decade since I heard it said of a young lady who was the first of her sex in town to get a bicycle and to ride it, "Oh, the immodest Miss ——." "She always was doing rash and bold things." "Nothing but a regular tomboy, anyway," and other derogatory remarks of a similar import. Such remarks applied to bicycle riding sound strange, indeed, at present, to those who do not, in 1905, live in spirit in the first part of last century. But it has not been more than two months since I heard similar remarks about an accomplished and beautiful lady who was wearing a divided skirt and riding astride of a horse.

But we are improving in this matter of the "tomboy." It is not long ago (and there are traces of it still lingering like vestiges of snow banks on the northern side of stone walls in late spring) when the standard of girlhood and young womanhood seemed to be pale eyes, pallid cheeks, mincing steps, and a "prunes and prisms" manner of speech. Hockey, golf, tennis, basket

RECIPE FOR THE REAL SPIRIT: MIX BOYS, NETS,
PAILS, AND POOLS.

"I have thought that the boy is the only true lover of Nature, and that we, who make such a dead set at studying and admiring her, come very wide of the mark. 'The non-chalance of a boy who is sure of his dinner,' says our Emerson, 'is the healthy attitude of humanity.' The boy is a part of Nature; he is as indifferent, as careless, as vagrant as she. He browses, he digs, he hunts, he climbs, he halloes, he feeds on roots and greens and mast. He uses things roughly and without sentiment."—JOHN BURROUGHS.



SISSIES AND TOMBOYS.

ball, and the "exhilarations of the road" in nature interests haven't yet got the upper hand in all aspects of young womanhood. In many a boarding school for young women we still line them up two by two for the conventional sidewalk outing. Imagine that with a boys' school! It would not take a long search to find many a high school where the young women get all their communion with nature out of formalin and over the microtome, and the standard of excellence is the neatness and primness of the note book.

But all this you say is not the negative of tomboyishness. No; neither is all flame of the same color. It depends upon what is burning. But it is part and parcel of the same proper, rank-and-file, conventional spirit. Applied to various materials, placed in different environments and the appearance is changed, that is all.

Nature Study is dead if it doesn't fill the lungs with pure air, arteries with redder blood, the muscles with better fibre; if it does not quicken the step, brighten the eye, and bring a certain spirit of abandon, a happy-go-lucky, free and easy vivacity that the old folks maligned by calling "tomboy." In Nature Study, especially by the girls,

THE SPIRIT OF NATURE STUDY

bright eyes, rosy cheeks, and happy hearts are worth more than stacks of note books and conventional walks on brick pavements.

Then, too, to the girl belong all the delights and advantages of athleticism as well as to the boy. I have a fellow feeling for that young lady in a Pennsylvania Normal School who insisted upon becoming a member of the class in boxing, the only one of her sex that did so in a class of fifty. And she was soon one of the first in skill. Perhaps she was called a tomboy, but I doubt if she cared for that, and the results are worth it. The training will count for health and long life and happiness, and it counted, too, for a successful buffeting of a big brother of one of the smaller, troublesome boys who, a few months after her graduation, came to the school that she was teaching and interfered with the management. As soon as he regained consciousness, and could pull himself together, he went home, but he went there with more respect for her. It was an argument for and from femininity that he could understand. Some learn by seeing, others by reading, more by thinking, and occasionally certain forms of mental acquire-

SISSIES AND TOMBOYS.

ments are best received and retained when pounded straight through the skull!

Not long ago a gentleman formerly active and prominent in business and in society, but now afflicted with an incurable nervous disease, invited me to ride with him in his carriage. He was large and imposing in appearance, he had a noble head and face, but was so nearly helpless that two attendants were needed to help him from his house to the vehicle. After he had with difficulty attained his seat in the carriage, he made an impressive gesture and said: "Let me preach you a sermon—with the text and the sermon in one sentence. Will you preach it to your nature classes—in season and out of season—wherever you go?"

I replied, "I have no doubt that you can give them some good advice. What is it?"

"Just this—with good health, everything; with bad health, nothing."

"But," I hear some one say, "that is just what I am trying to get—good health. I employ the best physician in town."

No physician can keep nor regain health for you. The physician is only one of many guides to nature—the storehouse of health. The naturalist likewise guides you to nature.

THE SPIRIT OF NATURE STUDY

He believes that the living plant is as healthful and much more agreeable than a decoction of its juices. Some things we take to the stomach—other things just as good to heart and lungs. Old Mother Nature is hale and hearty, but with a certain roughness in her character. She coddles not her weakest, nor strongest. She who would be her boon companion must meet her in a similar spirit. You can't get her best when you are in silk gowns nor on velvet cushions. She will give you heartiness when you meet her heartily. Her best life, too, is essentially feminine. It is the pistillate portion, not the staminate, that endures the longest. And these are protected and can endure because they are rough, or tough, or prickly, or firm and hearty.

So, girl or woman, go to nature, not for fragility, nor for delicacy, but for hardiness and strength. Pick not merely the beautiful flower for a bouquet, but tramp the road, scale the wall, or climb the tree, if necessary; push through the tangle and find health of body as well as of mind. You may tear your clothes and scratch your skin, but your appetite will be good, and you will not need "after-dinner" pills to assist your digestion.

SISSIES AND TOMBOYS.

"With good health, everything; with bad health, nothing." Let our girls be a little more boyish, aye, even tomboyish, if you please, but in the best sense. Do not, if you please, misinterpret nor misunderstand me; do not decide that I want all girls to be hoydens, to be loud, and coarse, and unrefined; that I want the girls to swear when a briar tears her frock, or to call on any of the heathen gods when a chestnut burr pricks her finger. I want nothing of the kind. One of the most accomplished naturalists that I have known was a woman, gentle, kind, and good. Good? More than that. For a brutal husband pounded her body, and abandoned her to her own resources or to the coldness of charity, and when the beast was dying in a hospital alone she cared for him like any other angel, and the man died with his head on her bosom, blessing her. And she was a nature student, and corresponded with Darwin, and wrote books, and made discoveries, and "liked bugs," and climbed fences, and was not afraid of a cow, and never shrieked when some one cried, "Snake." Oh, no! I don't like hoydens, and I don't like girls that swear. I am trying to tell you what I do

THE SPIRIT OF NATURE STUDY

like. Please do not misinterpret nor misunderstand.

What a fallacy it is to state that "words are signs of ideas." Frequently they are more than the ideas—they compel, drive, and even warp ideas. The original meaning of barbarian was merely a foreigner. Our "dunce" was but a follower of Dunsman, a famous schoolman who opposed so great prominence of classical studies in education. And now the word is a synonym for fool!

It seems probable that the word "sissy" originated in the days when it was thought necessary for the boy to live in a different world from that occupied by his sister. Men and women in those horrible days must never engage in the same pursuits, never think nor act alike; the standard of conduct and propriety was vastly different for the man and for the woman. Nowadays, when women may engage in almost any business permissible to men, when both sexes enjoy the same outdoor pursuits, is it so very bad for a boy to have at least some resemblance to his sister? Shouldn't he have the same gentleness, refinement, and purity? May she not skate, and ride a bicycle?

SISSIES AND TOMBOYS.

He should, of course, be whole-souled, and clean souled, hearty and genuine. But shouldn't the sister set him a commendable copy? If he can climb a fence by balancing himself on his stomach across the top rail, and with a yell and a wriggle land on his feet in the next field, why shouldn't she, if she wants so do so and is dressed for it? If he "likes bugs and things" why shouldn't she? She will if she may be allowed. In brief, what I have maintained that the boy should be, that I think the girls should be. And isn't the reverse true? We have been too much dominated by "tomboy" and "Miss Nancy"; we have been frightened away from the truth, and driven back to threadbare notions by "tomboy" and "sissy." It has been said by some one that if you want to kill a good thing, give it a ridiculous nickname. We admit; I think, that the qualities our ancestors mistakingly tried to kill, should now be restored. Then why continue the nicknames? Why not hasten on the restoration—name or no name?

A few months ago, from the high school in Calais, Maine, I took out a large party of young people in a nature study class. Nearly all were manly little men and womanly

THE SPIRIT OF NATURE STUDY

little women, and heartily enjoyed the afternoon, all in the same road, all climbing the same fences, listening to the same bird songs, watching the same squirrels, picking and examining the same flowers. But not all the pupils in that school thought it within the proper dignity of a manly boy to go on any pursuits in which the girls were engaged. There were two of the kind that brace up buildings on street corners and make tobacco spittle mosaics and splatter dashes of liquid filth on the pavement. Such manliness always strives to avoid sissiness by leering in the faces and gazing at the ankles of the sisters who pass the corner or cross the street.

These particular youths openly avowed that they were "not going to be sissies and pick flowers," and they hied them away to congenial dirt. Their absence was not noticed by the principal till the party was well on the way along the road. Then he started an investigation and discovered the "manly" non-sissyites in the horse sheds, vigorously taking in cigarette smoke and volubly putting forth profanity and obscenity. This, it is true, may have been an extreme case. But the pitiful part was not so much in the conduct of these two particular boys,

SISSIES AND TOMBOYS.

as it was in their example to many other boys who, in same or lesser degree, may have a wrong conception of manliness. Strength in character, as well as in muscle, is admirable. But filth and ugliness, a narrow mind, and a stained soul are detestable. What teacher or parent but knows how much bravery it requires on the part of a boy to be what his own conscience tells him he should be in gentleness, truthfulness, and kindness; what he should be in purity, and in a love of the true and beautiful because he fears to be called "sissy," or "Miss Nancy."

Is there any reason why a boy should not pick flowers and give a bouquet to a girl? If the girls do so why should he not, if he wants to do it? Any reason why he shouldn't see and exclaim over the beauties of a landscape as enthusiastically as a girl? Any reason why he shouldn't be as gentle as the girl should be and as free from cruelty or a desire to be cruel? Any reason why he should be more addicted to disagreeable or dirty habits than the girl? Any reason why he shouldn't as much as the girls have high ideals and gentle manners?

Let teachers and parents strive to bring

THE SPIRIT OF NATURE STUDY

boys to be one hundred per cent. boys, and girls to be one hundred per cent. girls. Then for full measure, pressed down and running over, add to the boys twenty-five per cent. of girlishness, and to the girls twenty-five per cent. of boyishness. In either case the result will be a well-flavored and pleasing mixture.

Your mathematics, your grammar, and spelling may help to produce for boy or girl the one hundred per cent. It needs athletics, Nature Study, and other outdoor interests to add the finishing and the flavoring, or to drop in the superabundant twenty-five per cent. qualities.

“But really, would you advise our girls to be tomboys and our boys to be sissies?”

See here! If you talk like that, you will see me rise up, and hear me speak words that are not in my new dictionary, nor in yours either. Please do not misinterpret nor misunderstand.

No, I would bury those nicknames, and dig up the good qualities they have long enough mangled, distorted, and misrepresented.

I DON'T KNOW.

I RECENTLY went into a large bookstore in New York City and inquired for a certain book. The boyish clerk said, "I guess we have it—I think I saw it here somewhere."

I replied, "If you know that you have it, and know where it is, please get it as soon as possible; if you don't know whether you have it or not please inquire at once, for my time is limited."

The boy pushed along the sliding steps, and, with the remark, "I think I saw it here the other day," he climbed the ladder and began to search the upper shelves. After searching for about ten minutes he was still digging in the remote recesses of the shelf. He had taken out the exhibition front row, and was exploring among the duplicates in the rear. Just then a stout young man came hurrying in. He had an air of "hustle" and of enterprise, and I felt

THE SPIRIT OF NATURE STUDY

like starting him, too, on the search, so as to hasten matters, but I contented myself by asking him about the book. Quick as a flash came the reply, "I don't know. I'm a porter; ask one of the salesmen."

"Well," I said to myself, "it is some satisfaction to find a man who knows he doesn't know." I had begun to have doubts as to whether or not the youngster on the ladder really knew what he was trying to find.

As the suspense was becoming unbearable, an elderly salesman appeared, and I said, "Please tell me whether or not you have a copy of —."

"No, sir," came the immediate reply. "The sale of that class of books is so limited that we don't carry them in stock. But we can take your order and get the book for you, probably by to-night; or if not, we can deliver it to you in the morning."

Here were exemplified the three kinds of knowledge:

1. The don't know whether I know or not.
2. The don't know.
3. The know.

While none of the three men could deliver the book, Nos. 2 and 3 were equally good

I DON'T KNOW.

as time-savers. The only one that defrauded me of my limited supply of minutes and exasperated me was No. 1.

As the hazy youngster descended from his perch, I said to myself, "You and the other two remind me of the classification of knowledge which I once heard by an educator. 'There are two kinds,' said he, 'attic and systematic.'"

The first is diffuse, chaotic, even dusty, one doesn't know what the pile contains. The other is like a line of well-drilled soldiers—every one in his place and ready for duty.

An elderly lady went into a well-equipped astronomical observatory. She peered over and under and thru her spectacles at telescope, dome, and astronomer. Then she said, "I'm glad to be here where you know all about the heavens, for I want to see how you study them and to ask you some questions. Please tell me what is on the other side of the moon. I have never seen any side except the one with 'the man' on it. What is on the other side?"

"I don't know," was the reply.

"You don't know!" she exclaimed, "Why, that's queer, I've always had a sort of an idea that there were lakes and trees and rivers on

THE SPIRIT OF NATURE STUDY

the other side, and perhaps houses.”

The astronomer smiled as indulgently as he would to a child talking of its playthings. But the old lady merely looked less admiringly at the professor.

“Please tell me, will we ever be able to predict the weather far ahead accurately,” she further queried.

“I don’t know, but in the light of the surprising accomplishments of the past it would be but a bold guess to predict what we may or may not do.”

“Humph.” Now the look had a tinge of pity and of contempt, but she ventured once more. “Please tell me whether there are any people on Mars.”

“I don’t know—you have as much right to surmise as I have,” was the reply, intended to be cheerful and encouraging. But the old lady didn’t take it in that way. This time the “humph” was louder, and the tone and look somewhat more contemptuous. After she had pondered for a moment, her whole frame quivering in her inability to express the sarcasm that filled her mind, she said, with a poorly-concealed sneer, “Will you tell me what is the use of being so everlastingly smart and learned if you

I DON'T KNOW.

don't know any more than I do about these common things?"

"It is, madam, to be able to say positively that I don't know," was the prompt and courteous reply.

The professor was right. It is easy for even a child to see the inhabitants of Mars, or extensive plantations on the other side of the moon. But the man of science says humbly, "I don't know," and the more extended his experience, and the deeper his knowledge, the more humbly yet positively does he say, "I don't know."

It is a simple matter requiring but little knowledge (sometimes the less the better) to "see things" almost anywhere—in this world or in the next, in this life or in some future one. And the queer thing about it all is, that the one who neither knows nor doesn't know, and doesn't know which it is, who has all sorts of fancies, sees all sorts of things, pictures all sorts of existences, including hells and paradises, has fallings away from faith to doubts, and lashings of doubts to faiths—these persons always have a feeling of pity or of contempt for those who, in the greatness of their knowledge, rise to the heights of a true faith, not in this or that parti-

THE SPIRIT OF NATURE STUDY

cular imagining, but that whatever is is right.

But the world is rolling on, time is passing, the people are becoming wiser, and larger is the number of those who, like Huxley, are agnostics in the best sense, in facts, as in philosophy, simply those who are not afraid to say humbly, reverently, "I don't know."

But, perhaps, I am wandering from my original intention, which is, that it is important for an educator to have the ability and the willingness to say, "I don't know," and to say it without fearing to lose his self-respect or the esteem of others. Such timidity is usually greatest along about the time of the educator's school commencement. He is then proverbially a know-it-all. The tasks have been completed; the accumulated knowledge of the centuries is his; he has gathered all the leaves of the Tree of Knowledge, and has them lying quiescent in his private library, while he has been out in the dark of the moon, and felled the Tree, and stored its trunk and branches safely in his private cellar. What the world shall know hereafter shall be graciously handed out by him, and by him only, and a little at a time, a very little at a time, so that the mental

YOUNG FOLKS AND THE OLD OAK.

"Here and there, as islands in a boundless sea, were the leafy tops of a few tall trees, and these, I fancied, were tempting regions to explore. Travels in a tree-top—surely here we have a bit of novelty in this worn-out world. . . . Did I dare sit in this same oak when the leaves have fallen, I should have strange tales to tell,—tales so strange that the summertide would be commonplace in comparison."—DR. CHARLES C. ABBOTT, in "Travels in a Tree-top."



I DON'T KNOW.

digestion of the rest of us shall not become overloaded nor dyspeptic. It is an agreeable feeling, but long before the next school year begins he will have a different sensation, one that will suggest that after all he may have collected the wrong kind of leaves, and cut down the wrong tree. If he goes into the cellar to examine the old log, there are hopes for him. If he doesn't, he is, as an educator, ruined for all time. The burden of attainments (in his own estimation) is so large that it seems out of all proportion and is therefore ridiculous. He is then a proper subject for the pen and the brush of the humorist. Here is a sample paragraph from a humorous paper:

"A recently graduated young man, on the street, was observed to hold up his hands each about a foot from the side of his head, his elbows forming right angles. I asked a bystander, 'What is he doing?' There came the quick reply of one who had a poor opinion of a college education, or at least of the college graduate, 'He thinks he is scratching his head!'"

But there is a pitiful as well as a ludicrous phase in this matter of the "swelled head." It is when it represses, from some official

THE SPIRIT OF NATURE STUDY

position, the free thought and originality of others—young or old. The teacher that thinks she must be a universal genius is to be pitied and so are her pupils. And yet this attitude of mind is one of the greatest obstacles to the general introduction of Nature Study in our schools.

“Why,” says the teacher who has fears that “I don’t know” means loss of appreciation and of respect, “suppose the children should bring a turtle, or a grasshopper, or some wild plant to me, and ask me about it and I could not tell them about it!” And she shudders at the imagined horrors of the situation. And let us say parenthetically that in the light of written examinations, where saying things correctly is the supreme yet fallacious test of an education, she is not altogether to blame.

“But what shall I teach about the turtle?” persists the teacher.

My reply is, “If you don’t know much about the turtle, let the turtle be the teacher. Turtle knows more about the subject turtle than you do, even at your best. Be a loving learner with the young folks. Then, too, so far as you do teach what you know about turtles, supplement what you know by

I DON'T KNOW.

what any child in the class knows. You will find it profitable to become an "I-don't-know." That was the spirit of Ralph Waldo Emerson, great and wise as he was. Hear and heed what he says in his instructive and suggestive essay entitled "Education."

"If a child happens to show that he knows any fact about astronomy, or plants, or birds, or rocks, or history, that interests him and you, hush all the classes and encourage him to tell it so that all may hear. Then you have made your school-room like the world. Of course you will insist on modesty in the children, and respect to their teachers, but if the boy stops you in your speech, cries out that you are wrong and sets you right, *hug him!*"

That is, be an "I don't know" as a learner at the feet of the child. This realization that the don't know is vastly more than the do know is the spirit of the truly learned. "A little knowledge is a dangerous thing" in more senses than one. It may be like a little sting with its poison, that causes its victim to swell and to continue to swell with a mingling of conceit and hypocrisy.

But note in contrast the humility of really profound knowledge. Says Sir Isaac Newton:

THE SPIRIT OF NATURE STUDY

"I do not know what I may appear to the world, but to myself I seem to have been only a boy playing on the seashore, and diverting himself in now and then finding a smoother pebble, or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."

A few years ago a child asked me how a cat purrs. I must admit that I came near answering off-hand, "Why, of course with its vocal chords, in the same way in which I should 'purr' or sing or talk." Then I thought for a moment and concluded that I don't know, and that such an explanatory answer would be nothing but guess work. Simple as was the question, it was too hard for me, so I wrote the professor in the two zoological laboratories of two well-known universities, and likewise to an amateur scientist in whom I had special confidence. One professor wrote back, "I have been engaged in research on the anatomy rather than on the physiology of the cat. I refer you to Professor ——."

Very edifying, so far, as helping me answer the child! The other learned professor wrote, "I have consulted such books as I have at hand bearing upon the subject, but I find

I DON'T KNOW.

nothing specifically stated. I have made note of your query for future reference, and if I find anything bearing upon the subject, I will write you."

My friend the amateur scribbled in lead pencil on the bottom of the manifold copy of the letter that I sent to him, "I don't know how a cat purrs, and no man, woman, nor child in the world does know how a cat purrs."

That was to the point, that was something positive and definite. That gave me confidence. "Here," I said, "is a man who either knows a thing or has the greater knowledge of knowing that he doesn't know it."

Confucius was a wise old philosopher, who taught the Chinaman many a commendable notion, but among the profoundest of his teachings is this: "What we know, to know that we know it; what we do not know, to know that we do not know it; that is knowledge." From Confucius to Mrs. Browning is a long leap in time and space, and in mental ability, too, perhaps, but in her "Aurora Leigh," which I think nobody reads in these hurrying days of electricity and of steam automobiles, in "Aurora Leigh"

I DON'T KNOW.

are wise, plead ignorance, and asked to be excused from committing ourselves.

A child inquires about the pits or holes on a snake's head. Are they the ears? Dr. Stejneger replies in the greatness of his herpetological knowledge, "I don't know the use of the pits and perhaps may never know. They may be the location of a sixth sense, and man will never be able to comprehend the nature of a sense he does not possess."

A girl writes to say: "I should like to inquire why grasshoppers are attracted more by white than by any other color. When I wear a white dress in the fields, I find several grasshoppers on it, but when I wear any other color they do not jump on me at all. Why?"

Prof. A. S. Packard, a learned entomologist, in response to inquiry regarding this, writes: "The little girl has made an excellent observation. It was new to me"; and then he goes on to tell of some of his investigations on the color preferences of butterflies in Switzerland, and that he intends to investigate in the new field suggested by the girl's inquiry. And that letter, the candor and childlike simplicity of it, spoke volumes to

THE SPIRIT OF NATURE STUDY

me of the present attainments and of the desire to know more felt by this eminent entomologist. That one frank "I don't know" has given me full confidence in many of his "I do knows" which he has given to me with full explanations of some of the puzzling questions that are so often presented to me for immediate answer, and which I have passed on to him, seldom to be disappointed.

The scientist who knows that he doesn't know also knows when he does know. In almost every pool of stagnant water there are small forms of tiny free swimming plants known as diatoms, some of which move as freely as a fish swims, but how? Echo answers, "How." Though the microscopists have for years studied them with the utmost zeal—the how is still unexplained. Neither is it known how certain *Oscillaria* (fresh water *Algae*) so constantly wave, curve, and twist. Then what about the circulation (cyclosis) of protoplasm in closed vegetable cells, and the movement of the protoplasm in the cells of the stigma (silk) of the young corn-flower, in the *Chara*, in the cells of the onion. These are all easily seen with a medium power of the microscope, but

I DON'T KNOW.

nobody can tell how the movements are caused.

Why do we wink? We all do it constantly, and involuntarily, but who can tell why?

Of what use are our eyelashes? Any, except an ornamental use?

How do lateral-eyed fishes and birds see? With an eye on each side of the head? Does the fish or bird see double; does it combine two differing visions, one from each side; has it the power to see two things at once, one on each side, each differing from the other; how DO lateral-eyed fishes and birds see? Please struggle with that question. If you give it up, you need not report; if you solve it I shall be pleased to hear from you.

When a man sits down, why does he want to elevate his feet? Why doesn't a woman do the same thing? She never does. If you ask yourself, or any other man, the answer will be, "I don't really feel at ease unless my feet are elevated." Why he feels in that way, or not in that way, no man knows, nor woman either, but he elevates his feet, and she does not. Why?

How does the sap of the tree or plant circulate? There have been a variety of

THE SPIRIT OF NATURE STUDY

explanations—all good, with the exception that none of them give us a clear, positive, thinkable knowledge of how the sap actually circulates.

Why does water rotate when it is running rapidly out of a hole in the bottom of a basin? The rotation is said to be due to the rotation of the earth, but who knows? Those two “Professors” will talk as learnedly about this as they did about the purring of the cat, and to as much purpose. And why does the water always rotate in the same direction?

Why do some vines twine toward the right (morning glory, beans, and most common twiners), while others turn toward the left (the hop, and some honeysuckles)? Why do not all honeysuckles twine in the same direction?

How does the muskrat open the unio? We often see the bank of a stream strewn with the scattered and empty mussel-shells, which have been opened by muskrats. The shells are unbroken, the valves are not separated at the hinge. The shell is not marred nor scarred, yet they have been taken out of the water, opened, and the contents removed. How? Try to open a

I DON'T KNOW.

living mussel-shell with your fingers, and you will admire the skill and the power of the animal that has left the empty shell on the bank. How DOES the muskrat open the unio?

And a confirmed old bachelor rises to say: "When two or more women meet, they all talk at the same time, each on a different subject, each at the top of her voice, and each talks until the subject or she herself is exhausted; but at the end of the so-called conversation, each woman knows exactly what every other woman has said. No man can do that. It is one of life's mysteries. How is it done?"

But I must stop or you will be saying, "He doesn't know anything," in a sense regarding "such foolish questions" that I never intended.

Seriously, would you rise to the heights of this commendable "I don't know" state of mind? Then go out with the young folks, tramp with them for miles along the roads and ravines and through fields and forests; go home, go to bed, and dream of animated interrogation points—Liliputians winding the threads of inquiry, "What is this?" "What is this?" "What does it do?"

THE SPIRIT OF NATURE STUDY

around you, great Gulliver, till in your nightmare, you scream, "I don't know," "I don't know," "I don't know—let me go," "I'LL TRY TO FIND OUT"—"I'll try my best—I will, I promise you"—then wake up and continue in that state of mind, and though you may not have become perfect, you will be vastly improved—that I DO KNOW—from experience—and some of us find that school the very best.

“ALL THE WORLD LOVES A LOVER.”

THE common acceptance of the oft-quoted statement, “All the world loves a lover,” is highly figurative in that it is what the rhetorician would call a hyperbole, or that figure of speech by which more than the literal truth is expressed. It consists in exaggerating objects beyond their natural bounds, so as to make them more intelligible or more impressive. “All the world loves a lover” means, usually, that every person in it loves to see some other person love a third person, or two other persons love each other. The statement in this, its real signification, is not true. It would not be a difficult task for almost any one to mention some other person who has not been pleased to see a third person love a fourth, nor to see the third and fourth love each other. For, out of many such viewings of other lovers, has sprung most bitter jealousy, intense anger, and acrimonious quarrels.

THE SPIRIT OF NATURE STUDY

But taking the saying, "All the world loves a lover," in its literal sense, without hyperbole, and it is absolutely and wholly true. All the world—animate and inanimate—organic and inorganic—loves every one that loves it. "All the world"—from nebulae to atoms—are only perfect mirrors reflecting back whatever of light, beauty, love we hold up in front of it. Nothing is lost in the reflection. Everything comes back in full force and intensity of vibration and radiation. Emerson has said that we may go the world over searching for beauty, and the search will be in vain if we do not carry it with us. But when we do carry it, then beauty comes back from everything. "All the world" reflects beauty to one who exhales and radiates beauty.

Long ago I came to the conclusion that nothing is intrinsically beautiful nor lovable. The love must originate with the lover; then, and then only, does all the world love him. I have been forced to this conclusion because I have many times known sharp-eyed persons to look at clouds and trees, at flowers and planets, and see no love there because they were not lovers.

In California one day, I was carrying in

"ALL THE WORLD LOVES A LOVER."

each hand a bouquet of the orange-colored poppies so abundant there, and had pinned to the lapels of my coat several smaller bunches. They had been brought to me by the children, so that I was taking what seemed to an old resident to be a ridiculously large burden of the commonest flowers of the California fields. With a laugh he said, "I guess you are an Easterner and haven't seen those flowers before. You seem to like them, anyway. Why, we don't care much for them out here; every field is full of them. They are as abundant as are daisies and the goldenrod that you folks in the East care so little for." And it was evident that those poppies gave him no love—he saw, he felt none—for they gave only to a lover. But I saw in California a conspicuous instance of how the poppy part of the world could love a lover. A California lady, who has for two years been visiting in the East, returned to her home. She went to the California poppy field and knelt for joy before a huge clump of the beautiful flowers. She shouted in ecstasy, and the tears rolled down her cheeks. It was a glad reunion of lovers.

Our first Californian was right in one

THE SPIRIT OF NATURE STUDY

particular. There are some in the East who do not care for daisies or goldenrod. To one they are weeds, to another "the eye of the day," the true gold by the roadside, riches that give pleasure directly without bartering.

This love that all the world gives back is never fickle. She gives ugliness to those who see ugliness, blindness to the blind, and always love to the lovers:

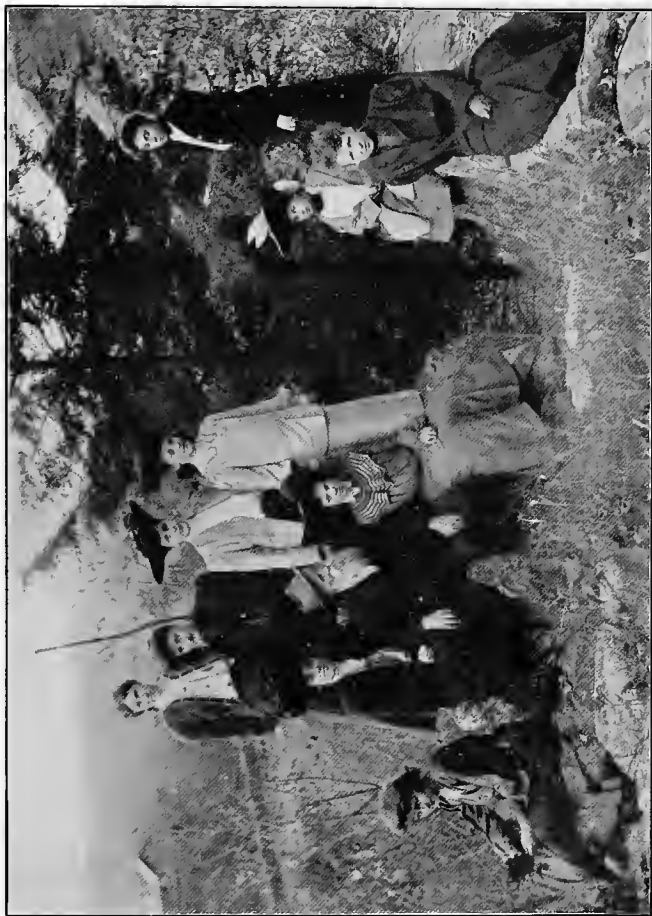
Nature never did betray
The heart that loved her; 'tis her privilege,
Through all the years of this our life, to lead
From joy to joy: for she can so inform
The mind that is within us, so impress
With quietness and beauty, and so feed
With lofty thoughts, that neither evil tongues,
Rash judgments, nor the sneers of selfish men,
Nor greetings where no kindness is, nor all
The dreary intercourse of daily life,
Shall e'er prevail against us, or disturb
Our cheerful faith, that all which we behold
Is full of blessings.

"All the world" meets the lover more than half way. But it is only to those who love heartily that she gives fully. As Hamilton Wright Mabie has beautifully expressed it:

"Our dealings with Nature are passive only so long as her varied life presents itself to us as a spectacle; and even in this neutral

WITH JOHN BURROUGHS ON THE PEAK OF "THE
MOUNTAIN," NEAR SLABSIDES.

"I should not try directly to teach young people to love Nature so much as I should aim to bring Nature and them together, and let an understanding and intimacy spring up between them."—JOHN BURROUGHS.



“ALL THE WORLD LOVES A LOVER.”

relationship there is a certain inevitable education. Mountain, seas, and sky do not leave the dullest man entirely untouched by their influences.”

“The world” would have all be lovers. There is a constant effort to win.

We are what suns and winds and waters make us;
The mountains are our sponsors, and the rills
Fashion and win their nursling with their smiles.

And how strange it is that we should be so few. Naturalists we call those who love all the world. One of these (Dr. Charles C. Abbott) has thus estimated the number of those for whom all the world feels an affection:

“One newspaper would not meet the needs of a village even, yet one naturalist is not to be found among ten thousand men.”

I will let one who speaks from experience and with authority tell you of this affection that all the world gives to him that deserves it. Sir John Lubbock thus eulogizes it:

“All those who love Nature she loves in return, and will richly reward, not perhaps with the good things, as they are commonly called, but with the best things, of this world; not with money and titles, horses and carriages, but with bright and happy

THE SPIRIT OF NATURE STUDY

thoughts, contentment and peace of mind.

“Happy indeed is the naturalist; to him the seasons come round like old friends; to him the birds sing as he walks along, the flowers *stretch out* from the hedges, or *look up* from the ground, and as each year fades away, he looks back on a fresh store of happy memories.”

THE WHITE WATER LILY AND WHAT IT REPRESENTS

EXQUISITELY beautiful, and unlike anything we have, is the first white lily just expanded in some shallow lagoon where the water is leaving it, perfectly fresh and pure before the insects have discovered it. How admirable its purity! How innocently sweet its fragrance! How significant that the rich black mud of our dead stream produces the water lily! Out of that fertile slime springs this spotless purity. It is remarkable that those flowers which are most emblematic of purity should grow in the mud.—HENRY DAVID THOREAU.

Again I scent the white lily, and a season I had waited for has arrived. How indispensable all these experiences to make up the summer. It is the emblem of purity, and its scent suggests it. Growing in stagnant and muddy water, it bursts up so pure

THE SPIRIT OF NATURE STUDY

and fair to the eye and so sweet to the scent, as if to show us what purity and sweetness reside in and can be extracted from the slime and muck of earth. It is the resurrection of virtue. It is these sights and sounds and fragrances that convince us of our immortality. No man believes against all evidence. Our external senses consent with our internal. This fragrance assures me that though all other men fall; one shall stand fast, though a pestilence sweep over the earth, it shall at least spare one man. The Genius of Nature is unimpaired. Her flowers are as fair and as fragrant as ever.—HENRY DAVID THOREAU.

My text is so long and so effectively announced by the master naturalist that little has been left for me to say, especially in the form of didactic assertion. I therefore content myself with a few illustrations taken from personal experience, and with a plea for the white water-lily and all that it may represent in the Nature Study in our homes and the larger school-rooms.

As I was riding in a crowded trolley car through one of the small villages east of New

THE WHITE WATER LILY.

York City, the car stopped for several minutes on a switch in front of a saloon. Suddenly the door was opened and a frouzled, blear-eyed head, with a slouched hat over one ear, thrust itself out, and in drunken tones a voice shouted, "H-h-how long before you go-g-goin'?"

"Right away—other car's comin' round the corner—hurry up if you want to go with us," replied the conductor.

"C-c-come on—give er feller er lift—won't you—I say—wait a minute, can't you—" The head vanished, but the words came through the partly open door.

In a moment the poor sot came out, assisted by a companion nearly as drunk as he was. The conductor's sharp call to make haste had angered the drunken fellow, and he profaned the air with a filthy gush of obscene words and maudlin stammerings. Poor wretch! No one on that car, except the conductor, had feelings of impatience or of anger for the unfortunate creature; we were filled with only an inexpressible pity for his degraded manhood. One could but think of wife and children at home, and that, to them, he was perhaps a loved one. His loathsome appearance and vile words

THE SPIRIT OF NATURE STUDY

would readily create a desire to shut one's eyes and ears, but there was nothing, as it seemed to me, to excite our anger.

But it seemed different to the conductor. He impatiently jerked the bell, he grabbed the drunken man by the shoulders and angrily shouted at him, "See here, mister, you'll have to stop that, *there are ladies present.*"

Here was a cause for anger—and I think many men on that car promptly responded to the call. One at least forcibly expressed himself to the conductor, who was sober, and who had insulted every man within hearing distance. Personally, I felt like grabbing him by the throat to throw him into the bushes that bordered the wayside ditch, and only my respect for the law prevented me from doing it. My will, and I think my strength, were at the time amply sufficient for that purpose.

In the name of all that is pure and lovely and uplifting in our struggles to rise to the highest plane of living and of thinking, did that conductor not note that there were men present? Did he think they were wholly on the low plane of adaptation to that kind of talk? And yet, I felt, notwithstanding

THE WHITE WATER LILY.

my anger at the insult, that there was just one little atom of excuse for the conductor. He was not individually responsible for the sentiment. He was expressing an almost universal belief. He was unconsciously voicing a far too prevalent opinion—that the woman naturally and justly belongs among a higher order of beings than the man—that everything in her presence should be the best and the cleanest, while “any old thing” goes in a company of men. That there is a greater percentage of pure-mindedness and of cleanly habits among women than among men, one is regretfully forced to admit. But to affirm that it is rightly so, or that it should logically be expected, is an insult to every Christian man.

Take a retrospect of the history of mankind, and there is every reason for pride in the purity, cleanliness, nobility, and high-mindedness of men. This was especially true in the ages previous to the earliest dawn of civilization, so far as we know from the records and from the study of the lowest races in more recent times. Not only bravery, courage, stoicism, but all good qualities of the race of “the noble Indian” center in the man. No one thinks of the squaw as purer

THE SPIRIT OF NATURE STUDY

or more high-minded than the warrior.

In Christian civilization, notwithstanding all that has been accomplished in the elevation of women, the fact remains that most of the visions of beauty and of purity in thought, most of the graceful and charming descriptions of "the good, the true, and the beautiful," have come first from our writers and artists who were not women. Most of the appeals for loftier thinking, and most of the examples of good living from the sages of old, from the Great Teacher Himself of goodness, all the way down the centuries, have usually originated with men. It is not in our "stars," but in ourselves that we are underlings, in that we have permitted the popular impression to gain a foothold that women are purer and live in a loftier and more ethereal region of sublimated thought than men. It is not even generally true.

But I have no disposition to argue as to the relative merits, or incorrect notions current as to the thoughts, actions, and standards in the life of the two sexes. Let us take the white lily and what it symbolizes, as a basis on which we may all stand, and agree together in amity that the boy and the man should be just as clean-souled, just as

THE WHITE WATER LILY.

pure-minded, as the girl or the woman. And he is so, until he is corrupted by evil companions, after which the struggle to make clean his spotted soul leaves there a scar that will stay till it is cauterized by hot and bitter tears, and till the smarting wounds are healed, as were those of St. Paul's Corinthians, whom he reminds of their degraded past, and tells them in words that scorch: "Know ye not that the unrighteous shall not inherit the kingdom of God? Be not deceived: neither . . . idolators, . . . nor thieves, . . . nor drunkards, nor revilers, . . . shall inherit the kingdom of God."

Then, with a joyous smile and a courteous gesture, for St. Paul was a gentleman, he tells them how they have escaped the horrible penalty, "And such were some of you: but ye were washed, but ye were sanctified, but ye were justified in the name of the Lord Jesus Christ, and in the Spirit of our God." Be not deceived. No reviler shall inherit the kingdom of God. The man that slings insults will have a horrible bill to pay. And pay it he will to the very last stiver. After I have joined in the company of St. Paul's justified Corinthians, why must I be insulted

THE SPIRIT OF NATURE STUDY

by such a creature as this trolley-car conductor? I wonder why? Is it because I am not a woman? Is it because every man is supposed to be what the Corinthians were when they were deceived? And I wonder why that conductor, small-minded, deceived as he is,—I wonder why he too is not in the company of the disinfected Corinthians? I wonder at that? Is it my fault?

In so far as we have not attained or have fallen from the ideal condition of the spiritual equality of the sexes, it is self-evidently the duty of every parent and teacher to maintain or to restore it. But this can not be done by theory: it must be done by things rather than by words.

Don't preach to the boy about purity. Your words may suggest more of a new evil than you will remedy of the old. If you would make a building white you do not sit on the sidewalk and plead and argue with the edifice to "be white"—no, you get a brush and go to work with the paint. The building is bound by a law of nature to reflect some color or tint. It depends on what you do (not on what you say) as to what the color shall be.

So it is with the boy. Put him with so

THE WHITE WATER LILY.

much of purity, or of whatever you wish to develop and strengthen, that he can't be anything else. An absolute vacuum isn't known, and it is also a fundamental principle of physics that two bodies cannot occupy the same space at the same time. It is largely so with thoughts. Go and get the white lily, and its associates, and bring in all they are and represent in beauty and in purity. A terrible task in this wicked world, but we must seize hold and do our best, leaving results to the future, although you and I may live to see none of them.

The white lily tells us that longing for light and for a higher life develops beauty and purity even out of mud—but not in mud. Put the boy and the girl, too, where they may aspire to the highest development, under the influence of the lovable and the inspiring objects with which nature abounds. Use natural objects for the development of all their best characteristics, remembering that the very scent of the water lily suggests purity.

THE EDUCATIONAL RABBIT

WHEN I was a boy, I often heard, with many variations and elaborations, a quaint story of two elderly maiden ladies who were fond of building matrimonial "air castles."

"Now," says optimistic Desire, "suppose we should live in such homes and have such husbands as we have been sposing and sposing, wouldn't it be nice?"

"Yes," replied the somewhat pessimistic sister, "I suppose, also, that it would have its drawbacks and its sorrows. Just think what trials might come. Suppose that I should be a mother, and the baby should grow, and grow, oh, so sweet and lovable—with little dimples in its chin that should show so prettily when it laughed, and we should all love it so much, and it should begin to say 'mama' and hold out its little hands to us so prettily, we should all love it so much, and it should begin to toddle about—and we should

THE EDUCATIONAL RABBIT.

bring it playthings and be so happy—and then, oh, dear (here she sobbed) it should one day be playing on the floor and we would all be so happy (here she sobbed twice) and it should carry all its little playthings before the old brick oven just after Aunt Delia had put in a pie, and she should neglect to fasten the iron door that never stays in place for half the time, you know, and the baby should keep right on playing, and laughing, and holding out its chubby hands so lovely (here they both sobbed—the tone implying that something very sorrowful was to happen) and—and—and that old oven door should fall down on the dear child's head, and kill it—boo—hoo—hoo—(here they broke down completely and sobbed and wept, and comforted each other, in the luxury of an artificial grief).

And the reader will surely perceive that the whole thing was pathetic—with some slight exceptions—there were no marriage, no child, no dimples, no play, no chubby fists, no oven door, no death. The lack of these few essentials changes pathos to hysterical balderdash.

Strange as it may seem, I remember that I never heard this story of death without

THE SPIRIT OF NATURE STUDY

thinking that it was told only to excite laughter. At any rate, I laughed in company with the rest of the amused audience, although I may have heard the same tale forty times repeated, with forty changes of circumstances and of color scheme. One variation placed the child at play on the cellar steps, when a ham fell down and fractured his skull. That was the luxurious climax of a fictitious grief.

In somewhat later years it slowly dawned upon me that, calamitous as was the end, the story was told by those good old people not so much for its humor, as for its optimistic moral—don't worry about imaginary trouble; the causes of real sorrow are fewer than we think. But if we must play with the imagination, it is better to erect our air-castles in a pleasing region, in a graceful style of architecture, to surround them by a beautiful landscape, and to put above them a blue sky. In still later years, a humorous element of the old-fashioned story began to take first place, not in the fact that appealed to me most as a boy—the improbability of the two old maids getting married and caring for a child—but rather in the absurdity and folly of abstract love and imaginary

THE EDUCATIONAL RABBIT.

sorrow. There was no child, then how foolish the love and the sorrow and the sympathy for the little affairs of a creature that never existed. We finally learn to leave fairy tales and Santa Claus to childhood; we discover at last that our real interest should be in *actually existent things*.

The history of Nature Study in the schools has been somewhat paralleled by my views of that story. In its infancy, a few years ago, we talked about the wonders of bird, of four-footed animal, or of insect. And the little folks opened their eyes, and their mouths, too, as we designed they should, and quite properly exclaimed, "Oh my!"

We told the loveliness, the charming ways, the cosy homes of these same forms of animal life, and the young folks responded properly with, "Oh, the dear things!"

We stood by and scrutinized the dying agonies of "Rono, the Howler," the tragic end of "Peeklet, the Widgeon," we mourned for Buggybig, for we 'never saw her again, and we never knew where she went, for she slept her never-waking sleep in the ice-arms of her friend, the Water that tells no tales." Or perchance we had another equally sad ending—and boo—hoo—hoohoo—how sad it

THE SPIRIT OF NATURE STUDY

all was—with some exceptions. These soon dawned on the educational world. There were no Reno, no Peeklet, no Buggybig.

Then we called for real things. Something that we could love, and care for, whose interesting ways and manners we could study, and if misfortune and loss overtook them, we could sympathize and help.

So our Nature Study was for many years a matter of poetry, and of stories in prose, and of sentimental songs—then it became real. First, as in my threefold stages of views of the story of boyhood days, we first supposed it to be a matter of exciting interest, then we supposed it to be a sort of finger-post to point out a moral pathway, or a force of some kind to “correlate” another force with something else as the real end. Now we know that the thing in all its reality is worth doing for itself. In later life we find enough real babies to love, to enjoy, and if need be to make us break our hearts with sorrow.

So now that we are in the presence of real things, not of imaginary stories of non-existent things—the burning question is, “What is most available?” For far away, tigers, wolves, otters, squirrels (far away from some city schools), we have substituted

"THE DEAN OF AMERICAN NATURALISTS," JOHN
BURROUGHS, AT SLABSIDES, WITH A
PARTY OF YOUNG NATURALISTS.

"I have unmistakably the feminine idiosyncrasy. Perhaps this is the reason that my best and most enthusiastic readers appear to be women. In the genesis of all my books, feeling goes a long way before intellection. What I feel I can express, and only what I feel. If I had run after the birds only to write about them, I never should have written anything that any one would have cared to read. I must write from sympathy and love, or not at all."—JOHN BURROUGHS.



THE EDUCATIONAL RABBIT.

the real horse, dog, cat, or other four-footed pet. But the horse we young folks can't take in our hands and have all to ourselves, neither can we always so treat the dog or the cat—that is, we can't always find them gentle and submissive. So for a real lovable four-footed animal I make a plea for the fancy pet rabbit as the ideal. It has most interesting and surprising customs. It will efficiently aid in developing the emotional nature of boy or girl. It does so much that it will tax and train to the utmost the powers of description. It is cared for with only a fair degree of difficulty and its care by the child is a powerful aid in training to do things efficiently, as well as mere training to say things correctly. The rabbit is strokable, petable, lovable and livable with. It never disgusts and never is anything but its best self. And that can hardly be said of cat or dog.

The rabbit, I say, is the ideal four-footed animal for "Nature Study." Most "courses of study" for the children in the large cities are recognizing this fact. The prescribed course of study for the New York City schools specifically mentions rabbit many times in its list of most available "common animals."

THE SPIRIT OF NATURE STUDY

It is cleanly in its habits, a perfect epicure in its diet (so far as in abstinence from things that are decaying or are otherwise disagreeable), is free from midnight Mr. Hyde-ing—always your true, sound Dr. Jekyll. Of what other four-footed pet can you say that? So I recommend, teacher, get a rabbit—and you and the young folks be happy in caring for it and in watching its interesting ways.

“WHERE ART THOU?”

AN evangelist recently came to the city in which I reside and conducted there a series of stirring meetings. According to the local paper, he was “one of the sanest people who ever came to Stamford to engage in work of this sort,” and, according to this same newspaper, one of his most effective sermons was based upon God’s question to Adam, “Where art thou?” In the displayed headlines of the article is the quoted subject, “Whither bound, neighbor?”

As a preacher would say, it seems to me that this subject naturally divides itself into three parts:

No. 1. The text—“Where art thou?”

No. 2. The different quoted subject—
“Whither bound, neighbor?”

No. 3. What the speaker chiefly dwelt upon—“Where will you be after death?”

From the printed synopsis, from which I quote, it appears that the reverend speaker

THE SPIRIT OF NATURE STUDY

said little, if anything, about No. 1, the text; touched briefly on No. 2, and emphasized more particularly No. 3.

“‘God knew all the time where Adam was; but the interrogation was intended to arouse Adam to locate himself. It is a hard thing to get people to locate themselves, either in morals or religion. Ask people where they are going when they slip through death, and they reply, “We don’t know”—can’t locate position in the next stupendous world. How consummately foolish!

“‘But thousands can’t locate themselves, while passing through Stamford towards their eternity. Ship ahoy! where bound, neighbor? Don’t know. If you were to hail a man on Atlantic Street, and ask him where he was going, and he couldn’t tell you, you might recommend a sanitarium for the benefit of his mind. If you met a ship in mid-ocean, and, in response to your hail, he should respond that he knew not whither bound, you would conclude that a crazy skipper was in command. Such conduct seems surpassing strange in earthly affairs. Say! but in Divine things how strikingly, colossally absurd. Where bound,

“WHERE ART THOU?”

neighbor, after death? Don't know. What! going into eternity sixty minutes to the hour, and twenty-four hours to the day, and yet not knowing where bound? O what a lost condition, what an utter absence of locating self beyond the grave.’”

While I heartily approve of all the speaker said on No. 2 and No. 3, it seems to me that the text itself is altogether too good to be thus wholly lost. It is a text and thought that very many persons who are seeking for the betterment of humanity, are apt to overlook. They don't mean to do this, I suppose, but they do it so often that it puts them in a wrong attitude, especially toward those who decline to look at things from the preacher's point of view. This misunderstanding must have been the cause of the atheist's statement that “some people are so everlastingly eager to get to the next world, that they forget to live well, truly and fully in this.” The atheist was of course wholly wrong (perhaps), and yet I wonder if he didn't voice one phase of truth. It is a great deal easier to live beyond than to live here, to anticipate than to realize. We think we are going to consider “where *art* thou,” and we are talking all the time about

THE SPIRIT OF NATURE STUDY

the going and the being somewhere else. "Man never *is*, but always is *to be* blest," most truly has said the poet. Those so everlastingly desirous of getting to the next world are often like a student desiring to study trigonometry before he has mastered the multiplication table.

But to revert to the text, "Where art thou?" It is a mighty bad (to use the speaker's illustration of the sailor), "Ship ahoy! whither *bound* neighbor? Don't know." But, perilous as that is, there is something worse—"Ship ahoy! 'Where *art* thou?' Don't know." With a fair degree of composure one can look forward toward an entrance into a strange country, which time will make familiar. But to have been for years in a "strange country" and not to know it, seems hopeless. The anticipation of a possible failure before making an experiment, is not quite so discouraging as the realization of failure after the experiment.

I have much sympathy for that sailor who was ignorant of his destination, but there is a possibility, like a ray of hope in the gloom, that he may find out and that the route will open up clear before him as he proceeds on his voyage! But I am pained,

“WHERE ART THOU?”

hopelessly, and beyond the power of words to describe, if the sailor has for a long time been in the harbor, and yet does not know where he is; but it is worse, if such a thing be possible, *if he does not care to know, and makes no effort to find out.* I fear he will never appreciate the voyage to new lands, nor know where he is when he should be getting ready to land. My judgment may be harsh, but I can judge of his future only by what I see him doing in the present. I know how painful his situation must be because I have had a similar experience. Many times have I been going into new and strange countries, where I did not know what I should find there, and yet I looked forward, not only with composure, but with absolutely pleasurable anticipations. The way opened up as I advanced. I found that the same method that brought me to any one spot kept me progressing safely and enjoyably into new fields. So I went forward with confidence, feeling that I should get to some other place exactly as I had come to that. But once I did not know where I was, although I had been there for a long time. I had been picking blueberries in a familiar pasture. Around bush after bush

THE SPIRIT OF NATURE STUDY

I went, perhaps for hours. Then I rested and looked away, and observed that the familiar farmhouse in plain sight had moved from southeast to northwest. And worse yet, a haystack in a cleared portion of the same field, that had been standing in the southwest, had actually swung around to the northeast. Then I felt positive pain. It made my head ache. I was forced to go in exactly the wrong direction to reach that farmhouse. What troubled me most was not the incorrect position of the familiar house to which I was *going*, but the unknown situation in which I *was* when I was compelled to ask myself, "Where art thou?"

In more recent years, I was traveling from west to east on the train from New York to Stamford. I dozed in my seat, and I noticed that the train had begun to run the wrong way.

"Stam-m-f-o-r-d," shouted the brakeman, and I went dazedly out of the car to find that the east-bound station and all its surroundings had swung around to the north. The east and west bound stations had changed places. The antics of those buildings asking me, "Where art thou?" gave me a painful sensation that lasted for

“WHERE ART THOU?”

many days. Indeed, I have a disagreeable feeling to the present moment when I think that I was forced to ask that east-bound station in surprise, “Where *art* thou?”

So you see it is the present situation that worries me. “Ship ahoy, sailor.” I mean you there on the deck idly gazing at the planks, fumbling over some trifling *artificiality*, hopelessly studying the route on some map, noting the fathomings and the contour of some distant unfamiliar harbor, when you don’t know where you are. It pains me when I see you gathering your mates and passengers around you, and dwelling on the fairness, the good waters of that distant harbor, and harrowing your soul about the uncertainties and trials of the voyage there—when all the time you don’t know and you don’t enjoy your own harbor. You are a hopeless case. If you can’t tell “Where *art* thou?” now and here, and appreciate it all, if you don’t know that you came safely here and haven’t confidence that you will go safely there, then indeed you are in a pitiable condition. Leave that card-playing, leave the artificialities, stop dilating on the beauties of the unknown harbor. Get out on deck and realize that *this* is a

THE SPIRIT OF NATURE STUDY

beautiful harbor where thou art. The great Maker of the Universe bestowed as much pains on this as on any other. He pronounced this "good" and I have confidence in his judgment. He put you here "where thou art," in this paradise, to enjoy this goodness and beauty first of all, here and now, where *thou* art. You will lose it only by improper use, and the greater number of present harbors and present paradises that you miss, the more thoroughly are you incapacitated to enjoy those to come. And the reverse is true. The more you rightly use this, the better fitted will you be to find your way to some other and to enjoy that. For further apprehension let us all cultivate a little—in fact, a good deal—of present comprehension. The supreme question for you to ask yourself is, "Where *art* thou?" Don't wander from the text. That is all-important. Thoreau said somewhere that he felt alarmed when he had walked a long way into the woods and hadn't *entered* the woods. Some persons have been in this world for three-score years or more, and haven't really known that they were here. And so, Reverend Preacher, I think your text fully as important as your deductions from it. The worry and

“WHERE ART THOU?”

the pain are not so much in connection with “passing through” this city as it is in “locating” while in it. We have no need to worry about getting here. The road was made clear as we came along, and the road out will not be greatly different from the road coming in. And at the next stopping-place there will be no fairer landscapes, nor more beautiful skies, no statelier trees, more joyous songsters, nor brighter flowers; no more cheerful hum of insects, more invigorating air, no more happiness, no better friends, and no better God.

And I do not believe that He will be better pleased by our loving that world than by our loving this. It was Browning who said, “God must be pleased one loves his world so much.”

That the road is good, that there are other places as fair or fairer, you and I, fellow traveler, have confidence to think, but at the very best it must be unknown. You and I have no means of discovering “Whither are we going?” The preacher should not blame us for not knowing that. A greater blame, a greater loss of happiness, comes if we cannot in some degree answer the question, “Where *art* thou?” Let us thor-

THE SPIRIT OF NATURE STUDY

oughly take our bearings here, *carefully learn every detail*, and the better we shall be fitted to sail on, and to lessen the trials of the journey, the better to enjoy another harbor and another Happy City on its banks.

THE "TRIMMINGS."

I RECENTLY read a pleasant social letter from a well-known and skillful teacher of Nature Study. A certain expression attracted my attention. It seemed to say so much, and expressed so well the fact that the battle is not yet won, that I desire to give it wider circulation, for the benefit of those who are hugging the delusion, that the present increased interest in Nature Study in the schools is all that can be desired. Here is the expression that so impressed me: "I fear that my associate teachers regard my work as 'trimmings.'" And he goes on to say, "I am sure that no one would make the statement openly—I just feel that that is the undercurrent."

And I rise right here, my dear friend, to say most emphatically that you are mighty fortunate in having so much to be thankful for, if they do regard your work as "trimmings," or, to continue the figure, as a *part*

THE SPIRIT OF NATURE STUDY

of the garment of education, although only ornamental. You may be thankful that they do not consider it a rent or a rip. Let them smile on your work pityingly or indifferently, and do you console yourself with the thought that it might be worse; that they might actually come out in loud-spoken opposition.

"What! getting discouraged? Pessimistic on the subject of Nature Study," do you inquire?

No, I reply; not at all so with educators, but with teachers, yes, sometimes.

Occasionally, perhaps more than occasionally, one finds a mind so intent on the small task of building a bridge over the Rhine, or of explaining a *pons asinorum* quadratic equation, or history of some Louis XXXII., and rightly so as a specialization in a part for the good of the whole, it fails to grasp the meaning of the whole. The men down in the ground digging the well, though they work ever so hard and so skillfully, can't see the farm.

No less an educator than Prof. Francis E. Lloyd, of the Teachers' College, New York City, has discovered in certain quarters for botany a regard worse than "trimmings."

THE "TRIMMINGS."

In a review of Professor Coulter's "Botany as a Factor in Education," he says:

"Professor Coulter expresses the belief that botany has been made secure in secondary education, although its full importance is not recognized by all those in whose hands the making of school programs lies. It is pointed out that the subject has suffered from widely-spread misconception, that it is concerned chiefly with aesthetic matters and that it is not a matter for serious study and thought."

Professor Lloyd admits that botany has thus suffered, but hopefully says that "We have been gradually changing our point of view." Then he goes on to look at the other side (as I am asking the reader chiefly to do in this article):

"Nevertheless, I believe, also, that Professor Coulter's optimism, cheering though it may be, is not wholly safe, because it does not accord with the observed facts, in some cases at least. Within the last few days my attention has been drawn to the fact that the biological studies have been wholly removed from the curriculum of a certain high school which enjoys the reputation of being one of the best in this country.

THE SPIRIT OF NATURE STUDY

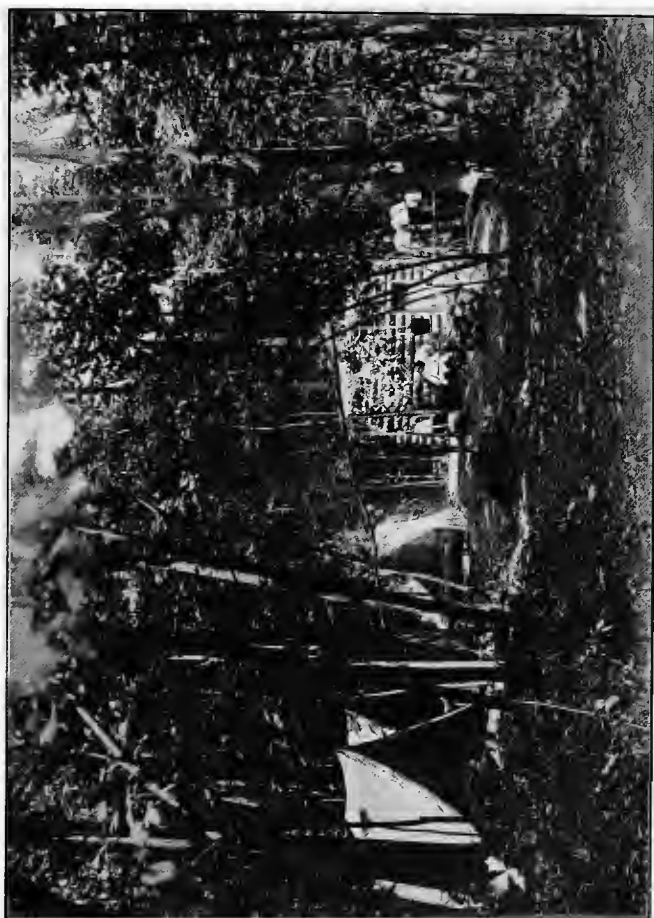
The reason given is that the interest and attention of the pupils, particularly the boys, are not captured and sustained by 'bugology,' as these pupils superciliously call zoology. The botany does not even share the honor of a place in their nomenclature of disdain. I must not forget to point out that the official concerned does not himself sympathize with the pupils, but is forced regretfully to withdraw these studies for the present. In all advances temporary retreats are unavoidable, and, in the long run, the optimism of the Chicago professor will be rewarded. But—and here is the issue to be faced—the fight is not yet won. To win we must constantly re-examine with all candor the conditions in the schools, and direct attention to better them."

Here is good common sense to which I most heartily say "Amen."

I would not preach discouragement, but work, work as you never did before, work for popular sentiment, work for the well-rounded education of the child, work for putting him in touch with this great and glorious world. The result will be, or one result will be, that the adult into which the child will develop, if he have ever so little

A NATURE STUDY CAMP.

About twenty-five young people occupied this camp. Excursions were made into the surrounding woods at all hours of day and night. One of the best of these was a "fox-fire" parade at midnight. The bird class was out nearly every morning before daybreak.



THE "TRIMMINGS."

knowledge of "natural history," of botany especially, will always have something pleasant to think about in his moments of recreation or of rest. This something pleasant to think about, is one of the rewards, if not the chief reward, of a trip to the Yosemite Valley, the Yellowstone Park, or to Europe. If you can, by any effort, by any sacrifice of your own comfort, a temporary sacrifice, perhaps, inspire a liking for the natural things of the world, you will be adding much to some developing adult's peace of mind, and satisfaction in what may be an otherwise unhappy or painful life. It is the pleasant thing to think about that brings forgetfulness of annoyance, mental annoyances, perhaps, but all the more difficult to bear because they are mental.

Stop and look back for a moment and you will be compelled to agree with me. Didn't you this very morning, as you were sifting the ashes in a broken sieve, burst into laughter, and lean on the shovel and shout with glee, at a picture of a happening twenty years ago, a delightful little experience that you had not thought of for many a long year? You did, and so did I. I did better sifting, and didn't feel cross at my broken sieve, for

THE SPIRIT OF NATURE STUDY

I forgot my lowly task, and saw a matter that lifted me into happiness, temporary, it may be, but a taste of the real thing. You can never think about something pleasant unless you have something pleasant to think about. Many a time, when I lie wakeful and restless in my bed at night, I travel again through the Yosemite Valley, and measure the "big trees" of the Mariposa grove with a string, and look through the "telescope" standing there as a dead tree with its heart burned out, but still in the place where it perhaps was standing when the Blessed Christ walked on earth. If you have no Yosemite, no Yellowstone Park, no Europe in your memory, you may have a botanical excursion, a rare plant, a beautiful "bug," a sparkling quartz-crystal.

Why, man alive, you are not building for the present, when you are teaching the urchin that mocks you; you are not working for the present when you try to interest the youth that sneers at you and your "bug-ology," and refuses, in his scorn, even to give a contemptuous name to the botany which you faithfully try to teach him. My dear sir, the present is literally none of your business. You are working for the future.

THE "TRIMMINGS."

The conditions force you to labor in the present, but you are working for the future. You seem to have forgotten this. The scorner of your botany will think of it with pleasure twenty years hence as he sifts the ashes in his dingy cellar. Don't get discouraged and take off the "trimmings." You may not know what you are doing until after you have died, but you will know then. And you will then be pleased. Don't get discouraged.

But in addition to the attempt to overcome this direct opposition, shouldn't we work, and work hard, to have Nature Study put in its true light as the greatest help of all? Rightly viewed, no other portion of an education is or should be so imbued with love, and love is the greatest thing in this world, the greatest factor in the development of every person.

But, says some Gradgrind, this love is all right, but it isn't dollars and cents. Most of the young persons in the schools want a practical education. They must earn their living. True, but more than that, they must live. There isn't much use in teaching the "earning" and forgetting the "living." Feeding, sleeping, adding dollars

THE SPIRIT OF NATURE STUDY

to dollars and dollars to years, isn't living, in the highest sense.

Then, too, Mr. Objector, meeting you right at the center of your own argument, hasn't love, or the amateur spirit, made most of the advancement of this world? Yes, and holds it there. It is not a gloating over the subtleties of mathematics, or the history of some word, or the battles of some warrior, but the application of the amateur spirit (the Nature Study spirit, if you please) to natural objects that has advanced all phases of living.

Take just one example, that of so simple and wide-spread an industry as keeping hens. I can fancy some old farmer's smiling pityingly on the enthusiasm of a "bird"-fancier at the show, and saying, "Oh, that's all frill; all 'trimmings.' I keep poultry for dollars and cents. No time for such foolishness." But a leading poultry periodical (the *Poultry Standard*) tells us that it is just this "frill" that makes the old farmer's business.

"It is the fancy poultry business that keeps the industry alive. It is the fancy that supports the poultry press, which in turn furnishes information relative to *both*

THE "TRIMMINGS."

fancy and utility. Without the poultry press the utility man could not prosper as he does, for it brings to him new and practical methods and experiences that are a great help and often the key to his success. No poultry paper can live on subscriptions alone, and the utility man has nothing to advertise, so all the support he can give is his subscription. Many papers devoted solely to practical poultry-keeping have started and failed from lack of a source of revenue."

But objector No. 2 rises to state that it may be admitted that a knowledge of Nature is highly valuable from the utilitarian standpoint, but it must also be admitted that it is not valuable as a mental training, not nearly so valuable, for instance, as logic or pure mathematics, or the study of language.

Right here let me quote from Dr. N. C. Schaeffer's excellent "Thinking and Learning to Think." He says:

"Courses of study are sometimes mapped out so as to cause inequality in the pace with which ideas are accumulated and language is developed. Undue stress on grammar, rhetoric, and *belles lettres* may cause abnormal development in the direction of flowery language, a verbose style, an

THE SPIRIT OF NATURE STUDY

ornate diction. It is a fault difficult to correct. To insist that such a student shall have something to say, to force him into studies that will bring him face to face with great questions as yet unsettled, to beget in him a state of mind in which he is troubled with ideas, to compel him to work over and over what he writes until his sentences are as clear as crystals, seems necessary to counteract the one-sided development of such students. The curriculum of study may err on the other side. The graduates in the various courses of engineering (civil, electrical, mechanical, and mining) sometimes develop technical, to the neglect of linguistic skill. In the presence of a body of capitalists they are made deeply conscious of the difference between the ability to think and the ability to express thought."

Here are both sides of the shield—thought and things. Bring the pupil "face to face" with *something*. The teacher of thought study has no right to regard the teacher of natural objects as dealing in trimmings. The "practical" poultry-keeper has no reason to find fault with the fancier. Don't be a linguist, a mathematician, a naturalist exclusively, be more than that, be an edu-

THE "TRIMMINGS."

cator. Magnify your calling, but do it in the spirit of Professor Ganong, who says:

"Specialization is by no means a selfish isolation in a narrow line of interests, but rather it consists in making one's greatest interest the axis for the grouping of the others. The conditions of modern life have settled it for us that the only well-educated man is a specialist, one who knows something well, it matters not so much what, and has sympathy for other things."

We are all weaving the main fabric, we are all beautifying. None are "trimmers."

“WHAT DID YOU GET”

HERE is John Burroughs's pen picture of the modern scientist in Nature Study in the fields:

“In our time, it seems to me, too much stress is laid upon the letter. We approach Nature in an exact, calculating, tabulating, mercantile spirit. We seek to make an inventory of her storehouse. Our relations with her take on the air of business, not of love and friendship. The clerk of the fields and woods goes forth with his block of printed tablets, upon which and under various heads, he puts down what he sees, and I suppose foots it all up and gets at the exact sum of his knowledge when he gets back home. He is so intent upon the bare fact that he does not see the spirit or meaning of the whole. He does not see the bird, he sees an ornithological specimen; he does not see the wild flower, he sees a new acquisition to his herbarium: in the bird's nest he

“WHAT DID YOU GET?”

sees only another prize for his collection. Of that sympathetic and emotional intercourse with Nature which soothes and enriches the soul, he experiences little or none.”

It is within my own experience that a science teacher expressed surprise that in my field work with the pupils more names were not told, more pads of paper and pencils used.

What did you get, what did you learn that you didn't know before? Get? We got a foundation to all the sciences. In meteorology we got the glorious sunshine, the beautiful blue sky, the invigorating pure air, and the refreshing breezes. In geology we got a most delightful tramp over the old hills, through the deep gorges, across the pleasant fields. In entomology, ornithology, and botany, we obtained equally good inspiration and enjoyment.

Enjoyment? So you went to have a good time? Certainly. For a good time, the pure pleasure of a delightful tramp. Let me quote again from John Burroughs:

“The purely educational value of Nature Study is in its power to add to our capacity of appreciation—our love and enjoyment of all open-air objects. I should not try directly

THE SPIRIT OF NATURE STUDY

to teach young people to love Nature as much as I should aim to bring Nature and them together, and let an understanding and intimacy spring up between them."

But I fancy some one will rise up and say there must be more than that—our schools are for serious work. But I say don't you worry about the "more" till you get "that." The first will make the second come with ease and enjoyment.

RETURNING WITH A LOAD OF GOOD THINGS.

IF it indeed be true that Nature Study, in the grades is due to a dilute science from the high schools, then it is most mi true that the high school thus casting its bread upon the waters shall after many days be profited in return. For, like the sap in the tree that goes out to the leaves and comes back chemically transformed for the better nourishment of the body of the tree, so shall our technical dilute science from the high schools go back transformed, quickened, enlivened from the heartfelt, spontaneous, informal Nature Study of the lower schools.

Here is a strong appeal for such Nature Study in the high school: (I quote from papers presented to the Michigan Academy of Science, published in the *Journal of Applied Microscopy*. Revised by authors.)

THE SPIRIT OF NATURE STUDY

THE GREATEST PRESENT NEED IN HIGH-SCHOOL WORK.

Aside from the importance of properly-trained teachers, endowed with enthusiasm and common sense, the greatest need in biological teaching in the high schools to-day is less anatomy and morphology, and more natural history and ecology. The prime object of a course in either zoology or botany in the high school, aside from its general educational value, ought to be to make the pupils love animals and plants, and find in them their friends. Every student ought to feel when he sees a new flower or animal that he has made a new friend, and each spring and summer ought to bring the renewal of countless old friendships. The high-school work in biology ought not to attempt to replace a college course, but should be introductory to the whole subject, leaving the details of morphology to the later course.—Prof. HUBERT LYMAN CLARK, Olivet College, Olivet, Michigan.

In reply to a copy of this sent to the author, he writes: "I do not think of anything I want to add to my printed statement, unless it be redoubled emphasis on the words

A LOAD OF GOOD THINGS.

—‘The high-school work in biology ought not to attempt to replace a college course.’ *The curse of our high schools to-day is to attempt to cover the same ground as a college, and by the same methods, and I am utterly out of patience with it.*”

In this matter the following extracts from other papers before the Academy of Science (same publication) will be of interest:

NATURAL SCIENCE NEEDS MORE NATURE STUDY.

There is abundant opportunity for ecological and physiological study in both plant and animal world. Such study rightly conducted will not only arouse interest, but will reveal the worth of these sciences. What is needed is fully-awakened, well-equipped teachers who will take advantage of these things and use them to instill a love of nature in the pupils. When this has been done the interests of parents will naturally follow, for inevitably the children will carry their enthusiasm into the homes. When the pupils and parents have been reached, strong forces have been set in motion for overcoming the indifference of those in authority. Once the value of this science teaching is under-

THE SPIRIT OF NATURE STUDY

stood by the authorities, they will be willing to provide necessary equipment and the needed teaching force.—MARY A. GODDARD, Teacher in Michigan State Normal School, Ypsilanti, Michigan.

COMMONPLACE BIOLOGY AND ITS RESULTS.

Will the time soon come when our boys and girls, after being in the school eight years, will know all the forest trees, all the wild flowers and weeds, all the flowers and vegetables of the garden and their general mode of life, and the relation of flower to fruit? Will they also know the haunts and habits of our native animals and be able to recognize our list of about seventy common birds and tell what they are good for? Will they be able to tell the direction of the wind and its possible shifting? Will they know a toad from a frog, and the poison ivy from the woodbine? When they do we shall be able to extend our biology courses in the high school, and our young people will have sharper eyes, keener ears, stronger lungs, and a deeper enjoyment in the big out-of-doors which belongs to them. Perchance too they will have a more rational view of life.—JESSIE PHELPS, Michigan State Normal Col.

A LOAD OF GOOD THINGS.

NOT ENOUGH NATURE STUDY IN THE GRADES.

The grade work has not been sufficient to enable our high school to begin science work upon a fair basis. It occurred to us that a year's work could be planned that would round out what had already been done, that would lead the pupil into a correct method in science work, and that would lead up to the after work of our courses. My talks and observation lessons have been along three lines—physiography, botany, and physics. My present class is composed largely of boys. I have studied them, that I might find their lines of interest, their needs. I have studied nature, the world just about us, in all of its aspects, that I might bring it indoors or take them outside to feel and to know it. At the middle of the year I took in several first-year boys who were seeming failures elsewhere. They have, in every case, made a success of Nature Study. These boys tell me, "We like this hour better than any other in school." The subject is one that will enable us here to hold boys right on to the end of the year.—
Mr. W. L. GERMAN, Menominee High School, Menominee, Mich.

THE SPIRIT OF NATURE STUDY

AROUSE PUBLIC ATTENTION.

The elementary science of the grades does not give the preparation for high-school science or for general life that it ought.

The thing most needed and really demanded, I think, is the popularizing of science. Books and papers are doing much, but illustrated lectures, exhibits, and entertainments might be given by the schools that would arouse the attention of our patrons. Perhaps the exchange bureau suggested by Professor Sherzer will help.—
JESSIE PHELPS, Michigan State Normal College, Ypsilanti, Mich.

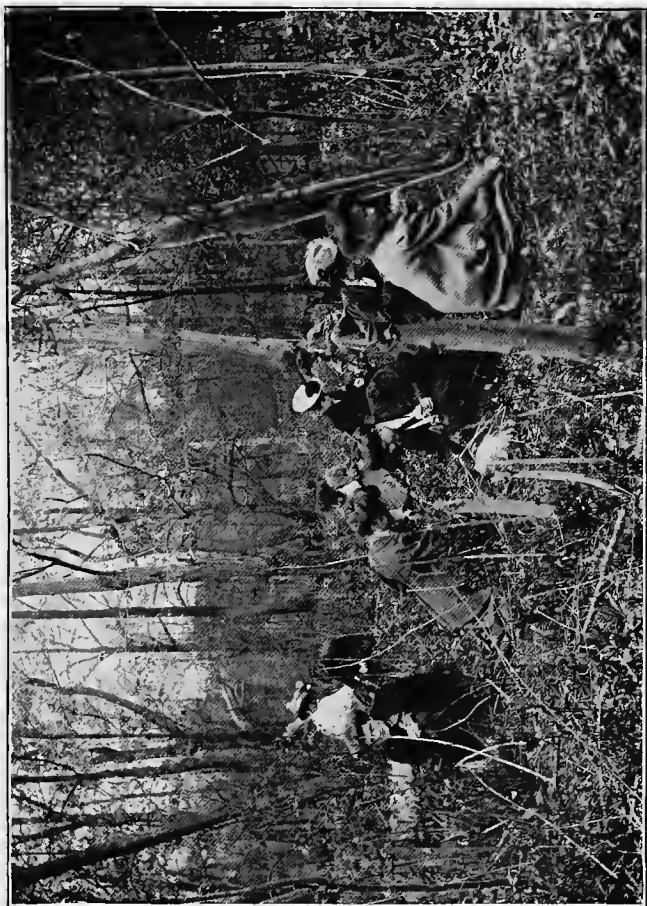
CULTURE NECESSITATES NATURE STUDY.

We have become convinced that some intimate, sympathetic acquaintance with the natural objects of the earth and sky adds greatly to the happiness of life, and that this acquaintance should be begun in childhood and be developed all through adolescence and maturity. A brook, a hedgerow, or a garden is an inexhaustible teacher of wonder, reverence, and love.

The scientists insist to-day on Nature Study for children, but we teachers ought long ago to have learnt from the poets the

PICKING VIOLETS—"GROUNDLINGS" OF THE
RIGHT KIND.

"It seems as if the day was not wholly profane in which we have given heed to some natural object. . . . He who knows the most, he who *knows what sweets and virtues are in the ground*, the waters, the plants, the heavens, and how to come at these enchantments, is the rich and royal man."—EMERSON.



A LOAD OF GOOD THINGS.

value of this element in education. The idea of culture has always included a quick and wide sympathy with men; it should hereafter include sympathy with nature, and particularly with its living forms, a sympathy based on some accurate observation of nature. —President CHARLES W. ELIOT, of Harvard University, in “The New Definition of the Cultivated Man.”

SHINGLE YOUR ROOF

WHY don't you shingle your roof?" inquired the Diligent Man as he passed the Dilatory Man's unfinished house.

"Wa-l-l, you see," drawled Dilatory, "it's just this way. We can live in it as it is. When it's fair weather we don't need the roof, and when it storms I can't shingle it. Wouldn't expect me to go up and work in the rain, would you?" What Diligent said in reply has not been recorded, nor can I affirm that the conversation ever actually took place. But if it is not a true story, it is a good allegory, and I judge that it is generally regarded as teaching something.

I have a feeling of comradeship for Diligent. I was placed in exactly his situation the other day. My inquiry was to a school superintendent: "Why don't you have Nature Study in your schools?"

"It's just this way," was the reply. "Per-

SHINGLE YOUR ROOF.

sonally, as you know, I am something of a naturalist, and should like to have Nature Study of the right sort in the schools. If I insist upon it, schedule it, it wouldn't be 'Nature Study,'—you know what I mean, the informal heartfelt sort,—it would be a perfunctory, cut-and-dried task or a bit of elementary or dilute science. If I don't insist upon it, don't allot a certain time for it, I don't get anything. There's the fix I am in. What would you do about it?"

"Do about it?" I will reply to Dilatory and to the Superintendent at the same time. If I saw the need, then I would do the work, rain or shine, carpenter or no carpenter, teacher or no teacher. I am not familiar with the details of this particular situation, what lumber shortage there may be, what strikes of carpenters, what lack of funds, what want of interest, what amount of science training, and I do not know how the schedules are crowded, but I should certainly make myself familiar with two things, the condition of the roof, and the needs of the child, and I would do another. I would provide for the future.

Perhaps you, teacher or parent, have a roof that needs shingling. Nature Study is

THE SPIRIT OF NATURE STUDY

gaining. In every direction the favorable signs are increasing. By and by there will be an outburst of common-sense demand in connection with the child's relation to the natural world. By and by the educational house will no longer be covered with a roof of paper in the shape of antiquated absurdities in the curriculum. That will be stripped off, and the genuine article, real educational shingles, of knowledge to protect from the storms and distressing cares of life will be demanded. What will you do then, when the blast comes on in full force? Let me tell you, Mr. Teacher and Professor Superintendent, what you will be forced to do. You will either shingle that roof, or you will get out. Your city will insist that the house be completed for the proper protection of its inmates and for the proper appearance, symmetry, and artistic balance of the edifice itself. When you are thinking of things in general, think of this.

The child and his parents may also need to shingle their own particular roof. The resources of the hypotenuse and of Caesar's bridge will not always be sufficient to smooth your path in what may be a rough and rugged life. Sometimes you will feel the

SHINGLE YOUR ROOF.

need of a sheltering protection in the shape of a real house with actual things, and real helpful resources within immediate reach of a sudden and unexpected demand.

Money, friends, position may be thrown aside as mere accessories. But old Mother Nature will remain, as a consoling and sustaining support.

Get such resourceful protection as early in life as possible. The weather is now fair. Shingle your roof and be prompt in your movements.

Take frequent rambles into the country; associate with natural objects, love them, take them into your nature, treasure the remembrances of them as you treasure your most secret and "heart-filling" reminiscences. It was in this sense that Dr. J. E. Taylor shingled his house, in the fair days of his youth, and had it ready for the storms of old age. He said:

"Is there anything more delightful than the fatigue of a summer afternoon's long ramble after objects one loves? You are not tired of them, but with them. It is a delicious fatigue. Subsequent years of trouble cannot obliterate the charmed impressions. They are the sunniest spots in

THE SPIRIT OF NATURE STUDY

one's memory. Their recollections come, like angel's visits, to unconsciously relieve us in after years of many a sad trouble and trial. They should be laid up in store when you are young, so that they can be drawn upon when you are old. Then the sunshine of youth is stored to gild the troubled days of matured manhood and the darker shadows of old age."

Thus shingle your roof. "By slothfulness the roof sinketh in; and through idleness of the hands the house leaketh."—Ecclesiastes x:18, Revised Version.

WHAT HAPPENED IN A CITY BACK YARD

I LIVE in a crowded street in Stamford, and all the houses in my "block" are double, my own family occupying half a house on a corner. Not many years ago, the residents within this immediate region were "the first families of the city," and there were fewer of us then than there are now, for at that time we were "out in the country."

But things have changed since we were suburbanites. We have become a "center of civilization," as houses have sprung up in every direction with almost the rapidity of mushrooms in a damp and fertile meadow. But, fortunately, there is a ledge, the site of an abandoned quarry at the northeast, that has stood as an immovable bulwark to resist the invaders that would approach from that direction. This ledge, with its accompanying forest, forms part of a beautiful landscape,

THE SPIRIT OF NATURE STUDY

toward which I look from my study window, and across which I see, in the faint and nebulous outlines that memory sketches, the old New England homestead of my youth. And it all serves to make me uncomfortable, because it suggests something that I want and cannot get. I look and wish and dream, and with a sigh turn back to the plodding and continuous work. If I were disposed to moralize, I should say that the majority of us have some such bit of tantalizing experience. It seems to be part of the price that we must pay for the privilege of living. And the trouble is that we don't utilize the experience for what it may be worth to us, but make it a bait for larger, unattainable things. To me, this bait—in the form of as attractive a scene and as charming, as can be found anywhere near my home, or deep in the heart of the country—this bait is dangling a suggestive “farm,” “farm,” “farm,”—“you with natural history tastes shouldn't live in half of a double house, with half of a back yard, in a crowded city, but in the free, open, adorable country.” So I should, but——

I heard the call, and I argued with it. But by and by I said, “What is the use of

IN A CITY BACK YARD.

our struggling in this way? The thing can't be done. I must take you for what you are. You must be my forest, my wild country back of my own "Dreamthorp" farm, and my real farm shall be here."

So I went to farming in half of a back yard. Of course, when you farm you should have fields, and crops, and a barn to put them in, and cattle, and a chicken-house, and a work-shop; you should be able to "see things grow," and to hear the roosters crow; and you want every visitor to hear the slumberous murmur of the bees among your own clover blossoms.

So I built a barn of a certain size, but the size doesn't matter. In this building I put a work-bench where I could saw and plane, and skin my knuckles and knock off my finger-nails at pleasure. Near by pens (some called them hutches) were provided for the "cattle." And don't you hear the young folks inquire, "What makes you call them 'cattle'?—they are bunnies." I never did like to contend with the young folks, so I let them have their way—and I have mine, too!

Now, what is the fun of pounding on a board or of driving a saw, if there are no

THE SPIRIT OF NATURE STUDY

alarmed hens to cackle? It would be like revisiting the old farm to find it deserted—the Juliet, lonely, with Romeo gone. So the chicken cages were near, and the dull bass of the saw chimed in with the tenor rooster and the soprano hen, while the plaintive tremolo of the pigeons cooing in the loft above—well, I was happy. But not long. I needed the bees to complete the orchestra. A discarded ash-pile in the rear of the yard made room for a bee-house.

But, wait a minute. I hear a discordant note. I had my buildings and my cackle and coo, and my hop and skip, and my hum-m-m to my heart's content, but I awoke to the fact that I had used up all my "land." No room left for fields, nor waving corn, nor vagrant pumpkin vines. But the thought was a suggestion. I will omit the corn and take the vines. They don't need much room on the ground! You know how that is!

I recall the old story of the dilemma in which the voters of a rapidly-growing town once found themselves. The town-house wasn't big enough, and a close-fisted, disgruntled old farmer owned the land up to within two feet of the walls.

IN A CITY BACK YARD.

The voters debated, and argued, and seconded, and amended during the whole of one weary afternoon, and, when the shades of twilight began to fall about them, they hadn't stretched the building site a single inch.

Just then a timely inspiration came to an old farmer. He leaped to his feet and shouted: "If we can't get any more ground, let's build another story—land is cheap up there!"

As I couldn't get any more ground, and couldn't stretch what I had, I said, "I will select a crop that will grow up." Even in my back yard there was plenty of room at the top. Vines would clamber up my buildings, and they should.

Then I sent for seed catalogues. You should have seen the pile. I wore my blue pencil to a stump by marking "Hundred Pound Giant Prize Squash," "World's Fair Premium Mammoth Field Pumpkin," "White Spineless, Juicy, Improved Cucumbers," "Novel Japanese Variegated Melon," "Egg-shell, Purity, Snowball Gourd," and I wanted them all. That is the thorn always concealed in the pages of every seed catalogue.

I had been taught as farmer boy that

THE SPIRIT OF NATURE STUDY

“whatever was worth doing at all is worth doing well.” The diligence with which I used that blue pencil, and turned down leaf-corners, and put in bookmarks, would have gladdened the heart of every progressive agriculturist in the land. Then I ordered the whole lot, because I hadn’t the heart to omit any of the alluring pumpkins nor any of those entrancing gourds. It is awfully difficult to make a selection in these important matters, because so much depends upon the decision. It is far easier to take the whole lot. But it wasn’t easy to know what to do with them when I got them. I didn’t “do” with most of that basketful of packages. I took a few seeds out of each, folded down the corner and there they are to this day, ready for next year.

But the few seeds that I did take out I tucked into the narrow beds, around the clothes-posts, under the steps, along the wall, in boxes of earth, on the flying cages. Now stop just where you are, neighbor, for I positively deny that I searched under the eaves for the phœbe’s nest so as to put some seeds in that, because I didn’t. My family say that I did. I did not.

Then the fun began. Lots of fun to watch

IN A CITY BACK YARD.

things grow, and vines crawl, and "wheels go round." But those vines went around everything. They hugged the posts, they perched on the top of the door, they peered into the windows of the children's play-room, they fought with the pigeons for an entrance into the loft; my wife said that they came near smothering a rabbit in its cage, but I deny that, too, yet they did spread out their leaves in a splendid green mosaic to catch every one of the sun's rays, and they pulled with their tendrils on wire netting and on human heartstrings, too.

The fruit? A hundred-pound squash hid under the wall by the sidewalk and the policeman looked at it and shook his club, and broke the Tenth Commandment. The boys on their way to school? Well, I rather think so. Crooknecks peered around corners and from under steps; egg gourds held themselves aloft on cages and roof as excellent examples to be emulated by the hens. The cucumber vines supplied our table for weeks; the summer squashes eked out the list of vegetables at many a July and August dinner; the big creamy rosette squashes made merry in the late summer and early autumn; the fruit of those vines, like the grand finale to

THE SPIRIT OF NATURE STUDY

the symphony, produced in a city home out
of a little back yard an old-time Thanks-
giving.

Ah! on Thanksgiving Day.

.
What moistens the lip and brightens the eye?
What calls back the past, like the rich
Pumpkin pie?

THE CRAVING FOR THE ROUGH

“**L**OOK at that, will you? That horse is eating dead leaves out of the ditch. Do horses like dry leaves?”

This exclamation and inquiry were made by my daughter, who is my stenographer and literary assistant. She had momentarily stopped the rapid clicking of the typewriter to look out of the window at the grocer's horse that the delivery clerk had left standing untied in the road, while he ran into the back yard with packages for the kitchen.

“No; horses do not prefer dry leaves out of the ditch for a steady diet, but, like you and me, and every other human animal, they enjoy a change from the everlasting clicking, scratching, gnawing routine of everyday's grind.

“Leave the typewriter for a few minutes, and take down in shorthand a few of the thoughts suggested by that horse, the dead

THE SPIRIT OF NATURE STUDY

leaves, and your remark. They may interest, I hope they will be of benefit to my friends, the teachers, especially to the teachers of Nature Study."

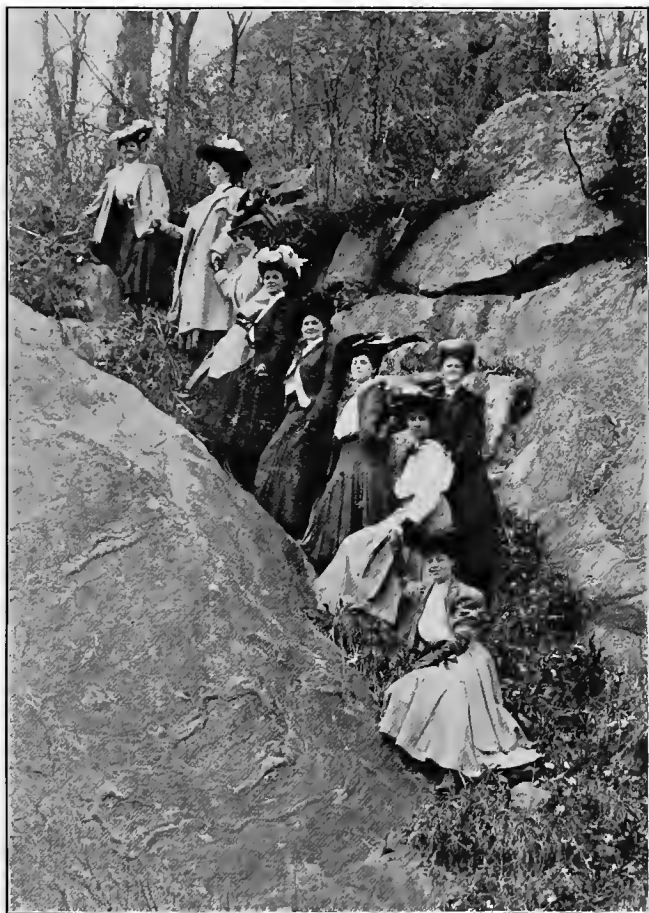
"By the way," I continued, "your observation and your surprise have a parallel in an incident that occurred in my boyhood days. 'Dutch Willie' was loading dirt from a bank just back of the hog pen, and I, a farmer boy, was watching him. 'Here, you boy,' he said, 'shust stop dem oxen; don't let dem eat up the pen. Dey vas shust so hungry much, dat dey eat up the old pigs and dem liddle ones, too, somedimes, bime by.' I took the whip and whacked the heads of the well-fed oxen, gee-ed and haw-ed and backed them up until the cart again stood in a position convenient for the work that Willie and his colored assistant had to do."

"What did he mean by eating up the hog pen?" laughingly inquired my daughter.

"He didn't intend to suggest that the oxen would devour the rails, as a horse will often try to do, but that they would eat the thatched roof which formed a shelter to a part of the pen. The old-style farmer generally used a big box as a pen for his pigs,

HALF THE FUN OF AN OUTING IS THE MUTUAL
HELPFULNESS.

The right spirit of Nature Study is that of a missionary—
lead some one else to the truth.



THE CRAVING FOR THE ROUGH.

and made a slanting roof with poles, over which he piled a lot of straw for a thatch. In this particular case, as I well remember, and I recollect it with surprise, this thatch was the crudest and most inedible kind, being nothing better than old buckwheat straw that had roofed that pen continuously for at least two years.

“‘You vas der von queerest oxen vat I neffer did see,’ indignantly continued Willie. ‘I done feed you shust all you vant, good clover hay and plenty of meal, and now you hungry so quick—you vant eat up the hog pen.’”

With boyish curiosity, I said: “Willie, what makes them so crazy for that old straw; they can’t be hungry?”

Dutch Willie made no immediate reply. A new idea, and evidently a humorous one, had arisen in his mind, for he leaned back on his shovel and laughed, with a wink of his eye at ‘Uncle Gib,’ his colored assistant.

“‘Wall, what ’er cotched you now?’ jocosely inquired Gib, as he recognized the challenge.

“‘Vell, dat’s it; dem oxen shust like you and me, Gib. We gits kinder tired living shust right, an’ a workin’ an’ a workin’

THE SPIRIT OF NATURE STUDY

efery day, and after a bit, once in a while, we haf to make a blowout, don't you know."

"'I'se been a philosophizin', too,' said Gib, 'and them's the conclusions wot I has come to. I can't stand it neider, less I hab a day's fishin' or coon huntin, about once in two weeks. I tell you, dem days is real refreshin'!'"

And, as I grow older, I do a little philosophizing, too, and I have come to the conclusion that the craving for the rough is inherent in every animal nature. Some of us bipeds eat leaves, some decaying stubble; some of us camp out in the wilderness in a tent, and wear old clothes, a "shocking bad" hat, and unpolished shoes. We reject all the softness of life. We leap into the rough, and take pleasure in having our skin scratched, or in other words, in having our mental cuticle abraded. We browse on thistles; we climb trees; we let our fingernails grow long and collect microbes, for the wilderness microbes, where the cerebral thistles flourish, are innocuous. The fact is that such microbes are exhilarating to any bipedal donkey who trots off into the rough, and rolls up his ragged trousers, and wades in the brook with bare feet.

THE CRAVING FOR THE ROUGH.

Tameness and civilization haven't been on this globe for very many chiliads. The back pull toward the original rough, get-what-you-can-and-make-the-best-of-it is frequent and strong. It is a call of nature. It is a call to primitive nature, where we were all monkeys, or at least wild Indians. And the desire is so persistent and so insistent that its occasional gratification is a positive necessity. As old Gib said, "Dem days is real refreshin."

"Did you ever see," said I to my daughter, and I say it too, to you, Miss Teacher and Mr. Parent, "Did you ever see a Sunday school picnicking party on its way to the woods? Ever see them leave their beautifully furnished homes, their velvet-cushioned chairs, for the stones and logs of the woods, ever see them abandon the thin drinking glass for a scoop of water in 'Diogenes' cup?' They think that they are going on a picnic. They are really going out to browse on leaves with a dessert of thistles; they are going to have a jolly old time. It will be 'real refreshin' to them.

"Ever see the wealthy banker leave gold-headed cane, silk hat, golf ground, and automobile, and go to the Adirondacks?

THE SPIRIT OF NATURE STUDY

There he wears blue jean overalls, and fries fish in a saucepan. The lawyer, his fellow club member, is wielding an axe on a fallen branch, and Doctor Jones is yelling from the lake to say that he's got a four-pounder. They are not frying fish, chopping wood, and gloating over a good catch—they are frying leaves and razing the hog pen; the wilderness microbes have made their cerebral cells drunk with the joy of a change into the rough. They call themselves sportsmen; they are not; temporarily, they are 'Wild Men from Borneo'; they have leaped back a few hundred years and are hobnobbing with the shades of their savage ancestry.

"Ever see the inmates of a young ladies' boarding school leave silks, satins, Steinways, graveled walks, and smoothly-mowed lawns to gather flowers, eat berries, climb fences, and giggle, like so many lovable girls let loose to enjoy themselves? They are really eating leaves; they are taking off the straw roof of conventionality."

"That's a new version," said my daughter, "but I'm not going to say that you are wrong, because I've been there."

Thus encouraged, I continued.

"Ever see the ministers, doctors, lawyers,

THE CRAVING FOR THE ROUGH.

merchants, and chiefs get back to the college banquet, eat oysters, slap one another on the shoulder, and yell 'Rah, rah, rah'? They think they are renewing their youth. Really they are feasting on leaves, pulling down the pen of formalism, and having a jolly period of freedom in the wild, and of a vacation from the sight of sad faces, and the insincere manners of conventionality."

"Hold on," protested my daughter, "what will you take next?"

"Take to the woods," I said. "No more writing for me. I must have some leaves, I'm craving for even old buckwheat straw. I must become intoxicated with the sweet sights and sounds that come to the pedestrian at this time of the year. I'll put on old clothes, I'll ask the school and some of the teachers to go with me. Young folks are fond of leaves, and likewise of straw, and such a riotous lot, such a crowd of rebels rebelling against discipline I shall never see in any other way. They and I must satisfy these natural and innocent cravings. If the young folks are not with me, they may be in company not so beneficial. I have learned that there is a roughness that stimulates and improves, and a roughness that lacerates and

THE SPIRIT OF NATURE STUDY

destroys. Which kind will you select? You may take your choice."

For your boy there are the woods and the pond and the net. There are also the crowded streets, the pool-room, and the billiard cue. I will take untamed nature. Will you, too, grown-ups, join me, and bring your young people with you? You will be more than welcome.

We must have "the rough." Primitiveness calls to her children to come home, and occasionally she does it with a peremptory insistence. She will take no refusal; she insists that you shall take the rough, but she will allow you to choose the special variety that you like best, for she knows that you are fond of some kind.

HOW PITIABLE THEIR CONDITION

WHAT a lamentable fact, what a mysterious Injustice, that so many people should be doomed, slave like, to toil in the ways and means of life that a few should really live. The world presents no sadder spectacle than that of rulers, bankers, merchants, mechanics, farmers and hosts of other workers in arts, commerce, government, all toiling year after year that a few naturalists and poets may admire and appreciate this beautiful world, and really *live* in it.

As a Merciful Providence has decreed that a swoon or the use of an anaesthetic shall inhibit or alleviate pain, so, to prevent the burdens of these "working classes" from becoming too grievous, He has likewise decreed that they shall be partly unconscious of their lot. This He has done by allowing them to amuse themselves with a kind of play in which the prizes are such treasures as gratified ambition or satiated vanity. But

THE SPIRIT OF NATURE STUDY

those few that are not under the obtunding effect of these delusions are of all men the most miserable.

It is strange, too, that the pursuit and the possession of such toys and baubles should not only make their owners' hardships endurable, but should make these persons actually incapable of enjoying true life in this wonderful earth of ours. And far more difficult of comprehension is the fact, that those who know how really to live have doled out to them a miserable pittance in exchange for an occasional, brief description of an existence that is actual, delightful, inspiring and good.

Is it not amazing that the toilers do not labor less, amuse themselves less, with these unsatisfactory trifles, when they might get at first hand that for which they are willing to pay something, but which can, at the best, amount to little more than a glimpse that comes and goes as quickly as an electric flash, that vanishes almost before it exists.

HUNTING AND FISHING

“**I**S it wrong to go hunting or fishing?”

Wait a minute, before I answer that question. Let me tell you a story of my personal experience—and it isn't a story of hunting nor of fishing either.

I was once a guest for a week at a Keeley Institute, where the so-called Gold Cure for Drunkenness was administered. Let me repeat that I was a guest. The managing doctor, who was my friend, had invited me to spend a week at his home. To me he seemed to be the best temperance lecturer that I had ever heard, although he said not a word of exhortation to temperance. This was the method. Soon after a patient arrived, he was given a supply of good whiskey, and the jovial doctor said in substance something like this, as I recall it: “Make yourself at home; don't hesitate to do what pleases you. You'll find us all a jolly lot of good club-fellows, and we want you to fall in with us and be one of us.”

THE SPIRIT OF NATURE STUDY

Such treatment and such "treating" was particularly adapted to astonish and please the patient. But all this I knew to be characteristic of the doctor, who had formerly been my family physician. He had the enviable knack of making a patient welcome him at every visit, while distasteful medicine from him always lost some of its repugnant qualities. Life at the institute seemed like that at a first-class club of "hale fellows well met." The time was spent in a pleasant sociality and in a variety of recreations. The board was unexcelled and the beds were luxurious. The primary object seemed to be to make the whole institution an enjoyable place in which to spend one's leisure. That was the natural outcome of the doctor's hospitable and jovial nature. I suppose, too, that such a plan was good business policy, because every inmate, when he returned to his home, would tell his friends what a pleasing experience he had had. The physician whose presence is the most welcome, or the dentist whose work produces the least pain, is the one that gets the most patronage, provided, of course, the attractiveness is united with a commendable degree of professional skill

HUNTING AND FISHING

“But,” you may ask, “what did your medical friend do to bring his patients back to habits of temperance, to wean them from their habits of drunkenness?”

That, at first, was exactly what puzzled me. It seemed to be the hilarious fellowship, the life supplied with free whiskey, in which intemperance would find stimulus and nourishment for rapid growth. But I waited and I finally saw the treatment applied. It took place regularly every morning. The patients lined up in single file, and marched by the doctor, who stood at a table. In his hand was a hypodermic syringe, and on the table a cupful of a mysterious liquid. Each man bared his left arm to the shoulder. Some, who had removed the coat, pushed up the shirt sleeve; others, who knew what was coming by previous experience, lifted “a corner” that had been cut through both coat and shirt. The doctor had a pleasant word for each victim as he put the syringe in the cup, pulled up the plunger, and pushed the needle point into the arm. The patient would show a brave front, but he passed on with a grimacing face. In that line came up a gray-haired man who, I imagined, was a grandfather. The doctor didn’t call his

THE SPIRIT OF NATURE STUDY

attention to the disgrace that he had brought to children and to grandchildren; he didn't tell him the total annual cost of the drink habits of the United States. He drove in the needle point remorselessly, but with a pleasant word, and the grandfather passed on.

A middle-aged man stepped up, a man well built, with a noble head and brilliant eyes, a handsome man. I happened to know him. He had been a lawyer of prominence. But to my surprise, the doctor's temperance sermon said not a word about the large percentage of crime that is caused by drink; didn't say that even the best-natured man when drunk becomes a beast, and is then likely to commit any atrocious deed; didn't tell him that the drink habit would probably land him in the prison to which his legal skill as state's attorney had sent many a criminal. No, he pulled up the plunger, thrust in the needle without a moment's hesitation, and the lawyer passed on, with a glimmering of a smile at the doctor's jocose remark.

A young man, really not much more than a big boy, was the next in line. Here was an opportunity for the doctor to pour eloquence on a forming mind. But, contrary to what

HUNTING AND FISHING

I might have expected, not a word did he say of the sorrow he was bringing to his parents, not a word about the shame he had brought to sisters and brothers; not a word about ambition lost; not a reminder of possibilities squandered, possibilities all the more potential since he came of a good family, and of "good stock." The doctor knew all this, yet he seemed to regard such arguments and such reminders as useless medicines; but he pulled up the plunger (I thought he filled the syringe extra full), thrust in the needle to its head, gave the young fellow a slap on the arm and a rub, as if he meant this application to have some special effect; the youth said, "Ouch," cringed, grinned, and passed on.

So, I saw treated about thirty-six patients of various ages, stations in life, and degrees of degradation. And what most surprised me was that the doctor, at another time in the day, offered every man a supply of whiskey. Some took it, others said, "I guess I have about half a bottle left, doctor,—enough for another day,"—but not a few shuddered, were nauseated, or showed a positive loathing at the sight. It was the grandest temperance sermon I ever heard,

THE SPIRIT OF NATURE STUDY

and yet there had not been a word about temperance, there had been no colossal statistics, no arguments, no appeals, no affecting anecdotes, but only a rythmical plunging in of that needle, a firm and relentlessly pushing down of that plunger, a regular application of the mysterious mixture, until every man so treated positively loathed the sight of what he had formerly loved. Then the work was done.

"But what," inquires the reader, "has all of this to do with hunting or fishing?"

Simply this, I like the style and the effectiveness of the doctor's arguments. To my mind this matter of hunting or fishing is not viewed from the highest plane when we ask the question, "Is it right?" or "Is it wrong?" It is not altogether an inquiry about cruelty to the bird or to the four-footed animal; not altogether a nice, distinctive point between killing for sport and killing for food, but rather a question between the dominance of a savagery inherited from a remote ancestry, or of a Twentieth Century high plane of living, or of attunement and sympathy with the beauties of a living and breathing creation.

My contention is not so much an argument about the rights or the wrongs of

HUNTING AND FISHING

hunting or of fishing, as it is a desire to make such a repeated application of Nature knowledge in the right prescription, that it shall change the longing to murder our feathery and our furry brothers of a life apparently lower than our own, and produce some mental nausea when even a thought of such savagery enters the mind.

Let us try to usher in peace on earth and good will to all creatures. To be perfectly frank I haven't full confidence in the efficiency of this "mixture" for you, grandfather, nor for you of adult settled mind, but, boy, or, young man, come out here into the woods and the fields, plunge into "the open" and try to make observations of yonder bird or squirrel, sink it in deep, rub it into your very heart, plunge it in again, but no arguments. If you are disposed to be argumentative, the medicine is not working right; but plunge in that bird's nest, little ones and all, line up here and plunge in that squirrel and the little ones in the nest with opening eyes and downy fur, and I shall then have some hope that you, young man, will become nauseated at the sight of death struggles and of bleeding wounds deliberately and purposely caused for the pleasure of

THE SPIRIT OF NATURE STUDY

what must be a small soul, or a preverted nature. But for you, old fellow, who may try to argue the question, I fear that you are not sufficiently far removed from your ancestors who lived in a cave, or in a tree, to show much effect from the injection of my Nature Study mixture. All that I can do is to appeal to your honesty. If you are a nature murderer and ravager, admit it; stand boldly on your own platform; be honest with yourself and with others; do not call yourself a nature lover, or a naturalist. So long as you use that gun in the slaughter of the innocents, so long as you take pleasure in the struggles of the fish in the water, so long as you rejoice in the agony of any animal, you are not a nature lover. I am not saying that you are wholly bad. I do not claim that I am right nor that you are wrong. I merely ask in all cordiality that you come and take another dose! I will eagerly watch for the effect of the medicine. While I am waiting to see whether or not this dose of intimate loving acquaintance with nature will bring you as surely to a healthy condition as the experiences of that master naturalist, Henry David Thoreau, brought him at Walden. While I am waiting to see

SOMETIMES "THE REST," AS IN MUSIC, IS THE
MOST EFFECTIVE PART.

"Is there anything more delightful than the fatigue of a summer afternoon's long ramble after objects one loves? You are not tired of them, but *with* them. It is a delicious fatigue. Subsequent years of trouble cannot obliterate the charmed impressions. They are the sunniest spots in one's memory. Their recollections come, like angel's visits, to unconsciously relieve us in after-years of many a sad trouble and trial. They should be laid up in store when you are young, so that they can be drawn upon when you are old. Then the sunshine of youth is stored to gild the troubled days of matured manhood and the darker shadows of old age."—
DR. J. E. TAYLOR.



HUNTING AND FISHING

the effect of my medicine, read what he says:

"I have found repeatedly, of late years, that I cannot fish without falling a little in self-respect. I have tried it again and again. I have skill at it, and, like many of my fellows, a certain instinct for it, which revives from time to time, but always when I have done I feel that it would have been better if I had not fished. I think that I do not mistake. It is a faint intimation, yet so are the first streaks of morning. There is unquestionably this instinct in me which belongs to the lower orders of creation; yet every year I am less a fisherman, though without more humanity or even wisdom; at present I am no fisherman at all."

This is the true Nature Study spirit. Prof. L. H. Bailey thus sums up the contrast of lack of desire with the question "right or wrong:"

"Children should be interested more in seeing things live than in killing them. Yet I would not emphasize the injunction, 'Thou shalt not kill.' Nature Study is not recommended for the explicit teaching of morals. I should prefer to have the child become so much interested in living things that it *would have no desire to kill them. The gun and*

THE SPIRIT OF NATURE STUDY

sling-shot and fish-pole will be laid aside because the child does not like them any more.

We have been taught that one must make collections if he is to be a naturalist. But collections make museums, not naturalists. The scientist needs these collections; but it does not follow that children always need them. To be taught how to kill is to alienate the pupil's affection and sympathy from the object he is studying. It may be said that it is necessary to kill insects; the farmer had this thought in mind when he said to one of our teachers: 'Give us more potato-bug and less pussy willow.' It is true that we must fight insects, but that is a matter of later practice, not of education. It should be an application of knowledge, not a means of acquiring it. It may be necessary to have war, but we do not teach our children to shoot their playmates."

Bishop Hall, in his "Contemplations on the Old Testament," says, in reference to our treatment of the lower animals, that "The angel of God takes notice of the cruelty of Balaam to his beast; his first words to the unmerciful prophet are an expostulation for this wrong. We little think it, but God shall call us to an account for the

HUNTING AND FISHING

unkind and cruel usage of his poor mute creatures. He hath made us lords, not tyrants; owners, not tormenters; he that hath given us leave to kill them for our use hath not given us leave to abuse them at our pleasure."

LOVE OF NATURE AND THE LOVE OF MOTHER

NATURE Study is not science. It is not one of the utilitarian studies. It should not be taught, expecting it to do something it should not do. It may coalesce with other departments of an education, and should do so, but is not a stepping-stone to them, but stands independently on its own foundation as an end and not a means.

Language study, drawing, and even mathematics may be benefited by companionship with it, but should never use Nature Study as a tool for its own ends.

In its effect in character building Nature Study is closely akin to patriotism and to the individual life, is parallel to what patriotism is in that and also the national life.

The sentiments are so closely allied that they may be said to be companions, and what ex-President Harrison says in the introduction

LOVE OF NATURE AND OF MOTHER

to "This Country of Ours," may well be noted for the excellence of his proposed methods in the companion phase of character building.

After citing examples of love, indifference, or disregard as characteristics of various nations, he says:

"If we would strengthen our country, we must cultivate a love of it in our own hearts and in the hearts of our children and neighbors; and this love for civil institutions, for a land, for a flag—if they are worthy and great and have a glorious history—is widened and deepened by a fuller knowledge of them.

A certain love of one's native land is instinctive, and the value of this instinct should be allowed, but it is short of patriotism. When the call is to battle with an invader, this instinct has a high value. It is true that the majority of those who have died to found and to maintain our civil institutions were not highly instructed in constitutional law; but they were not ignorant of the doctrines of human rights, and had a deep, though perhaps very general sense of the value of our civil institutions. If a boy were asked to give his reasons for loving his

THE SPIRIT OF NATURE STUDY

mother, he would be likely to say, with the sweetest disregard of logic and catalogs: "Well, I just love her." And we must not be hard on the young citizen who just loves his country, however uninstructed he may be. Nevertheless, patriotism should be cultivated—should in every home be communicated to the children, not casually, but by plan and forethought. For too long our children got it as they did the measles—caught it.

Now, in the schools, American history and American institutions are beginning to have more, but not yet adequate, attention, as serious and important studies.

The impulse of patriotism needs to be instructed, guided, if it is to do the every-day work of American politics.

"Sentiment, yes, never too much; but with it, and out of it, a faithful discharge of the prosy routine of a citizen's duty. A readiness to go to the fields? Yes, and equally to the primaries and to the polls."

That is patriotism in the elementary schools from the natural standpoint; that is building the citizen from the heart; that is beginning at the right end. You can add to that solid foundation any number of

LOVE OF NATURE AND OF MOTHER

diversified requirements of the citizen. What a foundation on which to build the various superstructures required in the upbuilding of a community!

Loves his mother, "Well, I just love her." I like that standpoint of loving his country, and the same spirit in loving this wonderful and beautiful world.

Oh, no, says, perchance, some scientific maternal appreciates, that's crude—it flavors of the Middle Ages, of the amateur, of those who love their mother from the heart. This is an age of scientific spirit, an age of the head rather than the heart, the intellect rather than the affections. Don't do any so simple loving as that, this is an age of intelligence, really know your mother, and then you can love her with solid appreciation.

First, collect some pictures and drawings of all the mothers you can find, arrange them side by side and compare your mother with them. That will add to your knowledge of comparative merits of mothers.

Devote a half hour every day at a certain time to the study of mothers. Draw a picture of her, make a detailed list of color of hair, number of eyes, nostrils, ears, length

THE SPIRIT OF NATURE STUDY

of chin, height, weight, number of fingers on each hand, state the age, past history, and a hundred or more other facts. Arrange these details under a few heads, draw a bracket around each, and collocate these in line under one big bracket with the word MOTHER written in big capital letters.

Make a drawing of your mother standing erect, and also bending down to kiss you as you leave home in the morning to go to school. Sketch in detail her eyes, fingers, and nose.

Write a list of nouns, adjectives, verbs, and adverbs that will apply to your mother, and from these compose ten sentences each day from 10:15 to 10:45 A. M., in connection with some of the drawing work, heretofore described, and if work is completed shortly before the time allowed, we will fold our arms and sing about mother. Bear in mind that you must never really go to see your mother for the enjoyment, simply the enjoyment of her loving presence, but you must learn to love her and let her influence permeate every fibre of your future life by noting down all details possible with pad and pencil!

LOVE OF NATURE AND OF MOTHER

But we all know that this is not the method of securing the highest degree of love for mother; in fact, such a method would tend to obtund a real heartfelt love for mother. So I think we may regard a parallel in love of nature. Too much detail, too much method, too much correlating kills it.

“WELL, THAT’S THE LIMIT.”

I RECENTLY attended a lecture on certain aspects of the West—I have forgotten the exact title, but I think that I shall never forget the painful wanderings of the lecturer from the spheres of knowledge in which he was perfectly at home, into realms where he was totally out of place and lost. I will not tell you what he had done, nor how painfully he wandered into matters that he had not done, and to which he was ill-adapted. But I will take some other things as a parallel, and for the sake of the illustration.

He had been raised, we will say, among the prairie dogs, had fed them, and evidently knew more of them than any other man on earth. He had evidently given his entire life to prairie dogs, had cared for large settlements of them; in fact he had been the government expert, and had chased them, literally on his part, but figuratively on mine, over hill and dale; had trapped them, slept

“WELL, THAT’S THE LIMIT.”

with them, petted them when they were good, and punished them when they were bad. From earliest boyhood he had dreamed prairie dogs; in his middle age he had been a master of large herds, and now, in his older age, still loved them.

In his introductory, hesitating statements to the audience, he superfluously told them “to be sure I haven’t much school larnin’.” The audience was aware of that fact when he first began to explain it to them. He was embarrassed, he stammered, he fumbled with various parts of his clothes, coughed, got tangled up and started again, then made another apology for “lack of larnin’,” and tried it once more. Some in the audience tittered; others simply held themselves in painful suspense. The man’s total lack of adaptation to the lecture platform was pitiful.

But after several times fully explaining “as how I hain’t had no chance at school,” he cleared his throat, mopped his face with his big handkerchief, thoroughly twisted both corners of his coat, and told why he had left his prairie dogs and gone into the lecture field, and succeeded in making the explanation clear to no one. Then he gradually approached the subject of the evening,

THE SPIRIT OF NATURE STUDY

"Prairie Dogs." The throat was fully cleared, the coat straightened out, and most of us had forgotten whether he ever went to school or not. The whole man underwent a marvelous transformation, as he forgot himself and became merged into "Prairie Dogs." And the audience followed him. We tenderly cared for the puppies, we laughed at their antics, we held our breath in exciting adventures, we shouted "Good," at the successes, and we almost, if not quite, cried at their misfortunes. That man—knew prairie dogs "from A to izzard," and he forced the audience to know them. He was eloquent in spite of the crudity of his speech. The audience admired him as a "prairie dog" keeper, but was pained by him as a lecturer—even when at his best. But the lecturer was not content with applause for the prairie dogs, but wandered into the "poetry" of a western sunset; he tried to eulogize a ravine, to reprimand the United States Government for its treatment of the Indians—and by that time the audience could have nothing but pity for the man who was making such a fool of himself. It was evident that he knew how to feed a prairie dog, but was totally lacking in ability to

“WELL, THAT’S THE LIMIT.”

produce a finished lecture before a cultured audience.

The people left the hall hardly knowing whether to be angry, or to be amused by the ludicrousness of it all.

“Well, that’s the limit,” remarked a school teacher to me on the way home.

“Yes,” I replied, “that is literally the limit; it was plainly apparent that the man had reached his ‘limit,’ before he began, had passed it even then and was at once out of his proper environment. Strictly speaking, his “limit” was the Western plains with his prairie dogs. He never should have tried to lecture. But I suppose he thought that every one who knows a thing has the ability to tell about it. But that is a mistake.”

“Isn’t it strange,” replied the teacher, “that some persons do not realize that they can’t do everything? Why don’t they stick to the one thing for which they are best adapted? I tell my pupils that the way to succeed in life, is to find out the one thing that they can do best and to stick to it.”

“You tell them so, but do you give them an opportunity in the schoolroom to show an individual taste?”

“Why, yes, I think I do——”

THE SPIRIT OF NATURE STUDY

"But where?" I insisted. And I continued, "Perhaps every pupil has the ability to show an individual talent at some one thing—but what study gives the pupil *choice* of field?"

"Come to think of it, I don't know that I do."

"I fear that your school is divided into grades, and that each grade is required to have the same lesson. What chance is there for a child to "find himself," so to speak, to find his own particular 'limit,' in the multiplication table, in subject and predicate, the capitals of the New England States, or what x plus y equals?"

So I argued it with her and I repeat to you, my reader, that there are too many persons, who, like that lecturer, are "the limit"—because they have strayed out of their own pasture field. And the trouble with a school where no Nature Study is taught, or where it is taught by the you-all-learn-this method, is that no opportunity is given to each child to exhibit or tell of his individual interests. The one thing that many schools need to recognize more and more distinctly is that no two children are alike, that each has his limit, and that he is

“WELL, THAT’S THE LIMIT.”

either ridiculous or else pitiable when forced to go beyond it.

Nature Study, rightly taught, helps the child to find himself. It gives free scope for full play of individual faculties—that is, when it is taught, as it should be, from the standpoint and the viewpoint of the child himself.

Unhappiness and failures are caused chiefly by lack of adaptation—by venturing beyond the limit. I never see a plant nor any one of the lower forms of life, put into a position where, as the biologist would say, it has a lack of adaptation to the environment, without feeling that the organism is “unhappy.” Misfits are always painful.

This would be a much less interesting world than it is, if every adult person liked and desired the same things. The familiar saying that “what is one man’s meat is another man’s poison,” may lack beauty of expression, and may connote something not altogether agreeable, but it is true. It is especially correct, we shall discover, when we think of our mental longings, our cerebral likings and dislikes. What two men or women really value the same book, or truly admire the same picture or actually appreciate

THE SPIRIT OF NATURE STUDY

the same result in any department of life? There is always a reservation, a little hesitation. "Well, yes, it is all that you say, but really, now, don't you think if it were a little different, changed slightly in this way, for instance, a little less color, or a little more firmness in the lines—oh, well, yes, of course it is really beautiful, but——" The "but" generally rears its head, and often its shoulders, above the general level, and becomes a stumbling-block in somebody's path. It is so with me, and it may be so with you. We are seldom really satisfied with anything. If each one of us adults has difficulty in concealing his individuality and his idiosyncrasies, do you imagine that these qualities are the development of our maturity? Of course you do not. Such things are constitutional. They were born in us. And they are born in the babies of the present day. They become no less when the baby becomes the school child. Indeed, they then are conspicuous, because the schoolboy has so little self-control and self-repression, that he never even tries to conceal his opinions and his desires, as we of a larger growth often do.

A scientific friend recently wrote me as follows of some of his school-day experiences:

A CONTEST OF EYES AND EARS.

No lack of spirit in this bird class. Will any member ever forget this early morning outing?



“WELL, THAT’S THE LIMIT.”

“When I was a member of the village school every pupil did the same thing, in the same way, at the same hour every day, and in the same sequence, except when I fell to the ‘foot’ for a misdemeanor. At the present hour I wish I had committed some more misdemeanors for the sake of the change that they might have made in that monotonous, daily routine of exasperating sameness. There was no teaching. Recitation, recitation, recitation, nothing but recitation. If the recitation were well done, it was well done; if not, the result was apparently the same. For two years I sat with the same ‘teacher’ in the classrooms of a ‘seminary,’ and in those two years the only word the ‘teacher’ was known to say, was ‘Next,’ when he grew weary of some pupil’s recitative.

“At the close of the session the ‘teacher’ made a mark at the end of each pupil’s name, and his work was finished.

“We were ‘taught’ botany. But when I think of that, I feel like ransacking the dictionary for ‘bad words,’ because my vocabulary of such expressions becomes so speedily exhausted. We were taught botany by using Gray’s ‘How Plants Grow’ as a reading book, without a word of explanation,

THE SPIRIT OF NATURE STUDY

with absolute silence on the 'teacher's' part, and incomprehension on ours. The picture of 'Air Plants of the Orchis Family' interested me, and I spent several hours of several Saturdays in searching the woods and groves for these pleasing objects!"

At the present day teachers really teach, and the pupil in the lowest grade probably knows more than his grandmother, and has had more exciting experiences than his grandfather ever had. In many respects the change is commendable. The schools are better than they were, the teachers are much better informed, and results are better. But perfection has not been reached.

There is one important feature that must necessarily be neglected. That is the child's individual mental tastes and longings, if he has any. Some children have none, and are little more than animated machines, or automata moved by the will of stronger-minded persons. They are exceptions and out of the lists at present.

Classes are too large. Teachers are too few, and have too much to do in the school-room. Until these conditions can be changed I know that individual teaching, individual guiding, and the development of individual

“WELL, THAT’S THE LIMIT.

characteristics must be left somewhat in abeyance. But something can be done in that direction by even the overworked teacher of the present.

Even the silly way in which my correspondent was “taught” botany, revealed to him the existence of an interesting something that it seemed desirable to know. That was really the origin of his present love for the science. For that he should be grateful, and for any good intentions, too, that the “teacher” may have had. If there is no more time, and no better method for introducing a little, even a little, Nature Study into the class, perhaps that “teacher’s” method might be imitated. It might have some good effect in the pupil’s after life. It probably would if he had the germ in him. In that case he needs only to be shown that it is in him. If he then has a ghost of a chance, he will let it develop as fully as is possible in a world given over to the getting of money and of our necessary daily bread.

In the common schools of the present nothing more is actually needed than the “Three R’s,” with a little geography and a modicum of history. A graduate from the “High School” often comes out with an

THE SPIRIT OF NATURE STUDY

absolute and complete ignorance of the existence of any natural object, except of the sunfish that he captures with a worm and a steel barb. That the worm means anything, that the sunfish is a sentient creature, rarely enters his "cultivated" mind.

I wish that all this could be changed. It will be in time, and it may be soon. The general public is now experiencing a spasm of virtue. Would that it might have another, and thrust some of the Greek, and Trigonometry, and Mechanical Drawing into the limbo of the dust-bin, and supply their places by a little, even a little Nature Study, although it might not be anything more important than the reading in the class of a book on botany or on geology.

I have said that misfits are always painful. Greek and trigonometry in the common schools are more than misfits. They add nothing to a man's earthly happiness, because, unless he is to use them professionally, he forgets them almost as soon as the school-house doors close on his completed course. Nature Study, even a little, will have a different effect. The offensive way in which my correspondent was "taught" botany did have some good effect on him.

“WELL, THAT’S THE LIMIT.”

I plead, then, for a bit of Nature in the curriculum of even the most elementary school. I sympathize with the teachers, so few, so nearly over-worked, but I beg them to drop some of the superfluous things in the school, of which there are not a few, and to give an hour or two to the examination of the material world in which they live. It is a beautiful world when you get acquainted with it. It was perfectly beautiful when it left its Creator’s hands. Every bit of ugliness that exists is the result of man’s meddling with that finished work. If you can find such a place, show at least some of your pupils a bit of Nature untouched and unspoiled by man. Let him see it, if you can, as it was when God completed it. Man has not changed the birds; he has not marred the wild flowers; he has disrupted and ruined the most picturesque and impressive rocks, but he has not touched the stars; he has not even tried to look at them. Even a little Nature Study will give the child scope to find his “limit,” will keep him from being misplaced, and will add to his happiness.

[The reader is referred to Chapter VIII—“The Method of Limits”—in that excellent book, “Pedagogues and Parents.”]

THE FUN OF BEING A NATURALIST

GIVEN, first, a person with intelligence, desire for knowledge, love of the beautiful—in short (and in length, too) with all that one would naturally expect a wise and loving Creator to embody in a Human Being.

Given, second, a World of varied and infinite beauty,—in brief (and *in extenso*, too) with all that it is possible for an omniscient and omnipotent Creator to put into that World so that it shall meet His own approval and shall by Him be pronounced, “Good.”

Now, in these premises, make this supposition: Put a large number of these Human Beings into this confessedly Beautiful World, and an astounding result will follow. A small percentage of these Human Beings will devote every possible attention and appreciation to this Beautiful World, but the larger proportion will be mystified by the

THE FUN OF BEING A NATURALIST

actions of the few (or possibly talking and planning as to what they will do when the Creator in some indefinite future shall give them a still more beautiful world), or, worse yet, go about ridiculing the appreciation of the few.

“Lovers of the true and the beautiful,” this small percentage would call themselves. They spend a part of their time in searching for these two things, and are members of the denomination called Naturalists. They worship the Creator under the stars, in the forests, by the lake side, in any place and every place where His works are apparent. But the larger proportion cannot understand this. Somewhere they have seen a member of this denomination admiring the beauty of a gauzy wing, or the graceful flight of a butterfly, and henceforth he is a “bug-hunter”; “Yaw, haw,” they all laugh and henceforth he is a “bug-hunter” although he may be looking at the rings of Saturn through his telescope, or searching for the nectar cup of a violet, he is a “bug-hunter.” He may be an astronomer or a botanist—provided he has a salaried position. (The salary seems to make all things clear and excusable.) But let your astronomer or botanist venture

THE SPIRIT OF NATURE STUDY

into other domains of the natural world for the love of it; let him admire and seek natural things for the pure pleasure of it; let him be a naturalist with the universal love more conspicuous than the special salary, and he is forthwith a "bug-hunter." The application of this term seems to afford the larger percentage much amusement. It seems to them a conclusive and convincing argument. But the fun isn't all on one side. The naturalist, too, has his at the expense of the other. And naturalists are fond of relating their funny experiences—to one another. No one else sees the joke. To members of the craft, I venture to relate a few of mine.

It was a hot summer afternoon. I was a long way from home and had just come up a cart path to the public road, after a tramp through the forest with camera and collecting case. At a short distance down the road was a farmhouse. I went to the gate, at the path leading up to the house, and was entering to visit the inviting, old-fashioned well near the end of the house, when the front door slammed shut. I was about half way up the walk when a voice screeched from an open window, "Don't ye come in here.

THE FUN OF BEING A NATURALIST

I don't want nuthin' to do wid you."

Surprised and abashed, I wondered why I was so unwelcome, when a second voice from the rear shouted, "Go for 'im, Tige, sic 'im."

"Bow-wow-wow," was the third voice as a big dog came bounding around the house and down the walk. It was embarrassing to have so much attention, and I felt that I was overrated and not entitled to it all, so I modestly, yet promptly, retraced my steps. As I reached the gate, light broke on the situation, as the first voice started on the second round of serenade. "Won't have another on the premises. We've had enough of you cheating peddlers. Won't buy another thing of you as long as I live."

Since then I have greater respect for peddlers, as I, too, have labored to dispense a variety of "notions," to draw attention to a multiplicity of beautiful wares, and as my experience has not greatly differed from what I now know must be a part of their business difficulties.

The other day I had a lesson in psychology. I was returning from a stagnant pool, with a net in one hand and a richly filled, open-mouthed bottle in the other. Literally there

THE SPIRIT OF NATURE STUDY

were "millions in it," and I was anticipating much pleasure in trying a new microscope lens on what I hoped, in this collecting by faith, would be especially good "finds."

"Been fishing?" was the inquiry of a fairly well dressed and an apparently intelligent man as I stood on the street corner waiting for the trolley car.

"Yes," I replied, "and I have had mighty good luck, too. Caught more than ten thousand handsome 'fish' in less than half an hour."

"Wh-h-at—wh-e-r-r-e?"

"Right here, in the bottle."

"Oh, I see. You've been catching bait."

Psychology lesson No. 1. How did he think I could get ten thousand bait fish into that bottle?

Then I explained that my fish were tiny organisms collected from stagnant water.

"Oh, ho! That's it! Now I see. They will grow larger and then you can eat 'em, or perhaps you raise 'em to sell."

Psychology lesson Nos. 2 and 3. Into what edible form of animal did he think they would grow, or why should some one else want them more than I? Perhaps they were to be so large that I couldn't eat ten thousand!

THE FUN OF BEING A NATURALIST.

I went into details, but the more carefully I explained, the more difficulty I had to imagine what he thought of the things in the bottle. I know what he thought of me. I was an escaped lunatic. !

I have thus achieved another distinction. I am a lunatic. So I am, I guess that's right, for I have spent many a happy hour in my observatory with fair Luna in all her phases.

A lady with her young son recently called at my home. She explained that he was her only child, and that she took great interest in his development. "I desire," she said, "to provide everything helpful." And she went on to explain that she fully realized the importance of having him interested in pets, as that will teach him to do things. "I am confident that a boy who gives loving care to pets cannot be selfish." To which I agreed, for I caught her enthusiasm and, I think, became eloquent. She agreed with all that I said. We were in perfect harmony. I was charmed, but I was also selfish enough to have my pleasure heightened by the prospect of additional income, for the expenses of the warren, even with strict economy, were becoming somewhat burdensome. I ex-

THE SPIRIT OF NATURE STUDY

claimed that I had rabbits at from fifty cents to ten dollars each, and felt sure that one so enthusiastic would take a pair of the best at the higher price.

But the boy was a financial factor with which I had not reckoned. In vain did I show the fine points of the best. Nothing could take his mind from the "cuteness" of the youngest and poorly marked specimen.

"How much are those apiece?" he eagerly asked, and as his expectation went above par, mine fell several points below.

"Not much," I replied. "If you want one or two of those, call them fifty cents apiece."

"Fifty cents apiece!" the mother fairly shouted, and then in a low tone, meditatively, "Why—rabbits—are — awfully — expensive, aren't—they? I didn't—know they cost so much."

Then I perceived that it must have been that she either did not hear my first quotation for the fancy breeders, or else was so delighted with her son's enthusiasm that she didn't realize it—or else—a happy suggestion comes to mind—perhaps she thought I was putting a price on the building and its contents!

But it was refreshing to see the genuine

THE FUN OF BEING A NATURALIST

delight of that boy. None of the quotations had entered his mind. He was really interested in rabbits. "Mother, look at that little one sit up and wash its face. That's the one I want." And he tugged at his mother's dress and danced in delight. Whether it was this pulling or the ponderosity of my proposition, I am not sure, but the mother leaned her elbow on one of the hutches, and was very solemn. If I had had the slightest doubt that she really couldn't afford to pay fifty cents or hadn't the amount, that would have been entirely another matter. But all indications were that she could afford fifty dollars apiece if it were something that she really desired for herself. While I busied myself in some minor matters, she still cogitated and finally evolved this: "I have always wondered how a naturalist gets a living. Now I understand. You must be a regular banker if you raise rabbits and sell them at that price. Why, they breed so fast you'll soon be very rich."

I made no reply. Why should I? I could not deny the allegation. Three rabbits from a family of five (two died) in six months. Six a year. Keep every six a year and that's fifteen thousand, two hundred and ninety-

THE SPIRIT OF NATURE STUDY

seven at the end of several years. (I didn't figure out to see exactly how many years.) At fifty cents apiece, that would be seven thousand, six hundred and forty-eight dollars and fifty cents. Keep that sum for several years more and still continue to breed and sell some, at fifty cents each, and in some more years it would be a total of six million, four hundred and seventy-seven thousand, five hundred and eleven dollars and twenty-three cents. No wonder she predicted that I would be a banker! But I do not need to wait, to sell rabbits all that time. I am already a banker, for

"I know a bank where the wild thyme grows," and a sand bank where I catch ant-lions, and another bank where I have found a kingfisher's nest, and another bank "where the woodchuck digs his well," and another bank—but why revel in all this wealth? It makes one feel guilty to have so much when there are so many poor, and that, too, in a world so full of wealth as this.

But to revert to rabbits. I didn't make a sale. And so I haven't been diverted into that mad career of piling up a colossal fortune. But I do not regret it. No use in repining.

The laboratory still affords lots of fun when

THE FUN OF BEING A NATURALIST

certain bipedal specimens arrive and wonder how a naturalist manages to pay the butcher and the grocer. This class pleases me rather better than the other.

I was busy in the chicken yard one evening, when a loud voice said, "I am Lawyer —, from —. My daughter has been teasing me to show her a naturalist at home, and I must admit that I myself am not wholly free from curiosity as to how you do it."

"I find no better way to do it," I said, than this (as I poured a pail of water into a pan). I know that some persons advocate these self-watering devices, and at the chicken show in New York I saw a man who exploited——"

"No, no. I don't mean how you water your chickens, but—I—I mean what does a naturalist do?"

"What does a naturalist do?" I repeated the question to gain time, to collect data on the subject. It was too big a topic for extemporaneous speaking before an audience of two strangers, and made more difficult about that time by a chicken that had hopped into the empty pail, and another that squawked as I stepped on its foot. I freed myself from these embarrassments, and started to make

THE SPIRIT OF NATURE STUDY

a mental outline and to get a pan of corn.

I soon saw that I must resort to subterfuge for the outline as I dove into the barrel for the corn.

And then a bright vision loomed up for a moment. Only suppose he had asked what a naturalist does not do. I could have told him that.

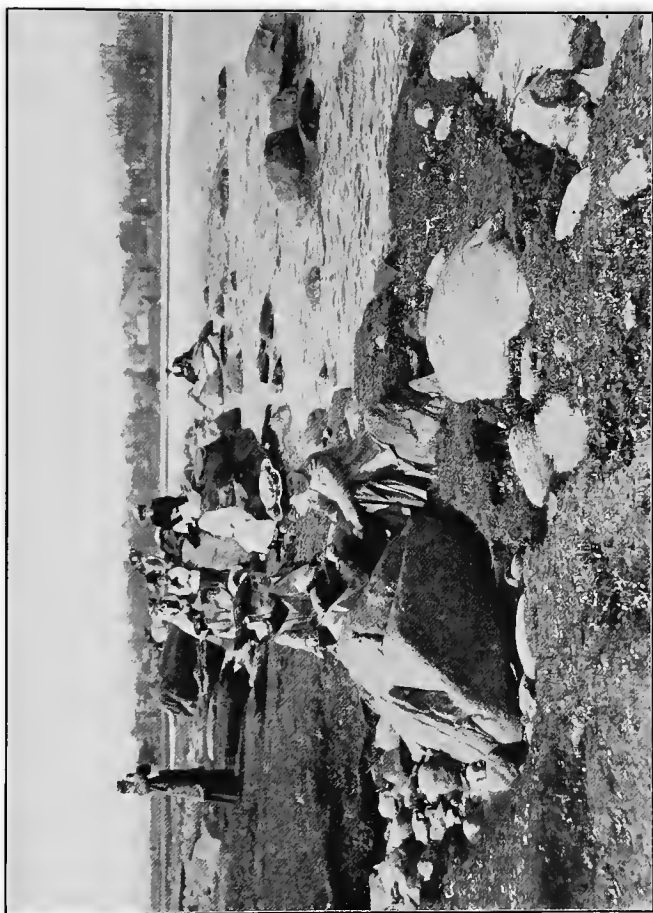
But he hadn't, and I had—the pan of corn and the chickens flying all about me.

I thought of the oft-quoted saying, "Everything is 'fish' that comes to the 'net' of a naturalist," and I said to myself, "I'll make 'fish' and an illustration of this chicken." To my solemn, professional interrogator and his handsome but earnest-faced daughter, I said, "Let me show you a bit of chicken control; some call it animal hypnotism. You have come a long way to see, and I am delighted to show you." Then I performed the little tricks familiar to every farmer boy, of course regarding all this, and the play with the chickens as I was feeding them, as an entertainment only, and expecting, later on, to answer his question seriously, for I saw that he was in earnest.

To my astonishment and no little amusement, I discovered that his mind did not

THE FASCINATIONS OF THE SEA-SHORE.

"The sea-shore, with its stretches of sandy beach and rocks, seems, at first sight, nothing but a barren and uninteresting waste, merely the natural barrier of the ocean. But to the observant eye these apparently desolate reaches are not only teeming with life, they are also replete with suggestions of the past. They are the pages of a history full of fascination for one who has learned to read it."—AUGUSTA FOOTE ARNOLD.



THE FUN OF BEING A NATURALIST

discern the joke. He was misconstruing the bit of play as a direct illustration in answer to his serious question. At first I could not realize it, though I thought he took it in a mighty matter-of-fact way.

The situation dawned on me when I had referred to taking a snap shot of a chicken in a particular, "hypnotic" pose, and he inquired in all seriousness:

"But, tell me, pray, how did you discover you had the power?" And without waiting for an answer he further inquired, "And have you no competition? Has no one else ever been able to do this, so that your photographs of these poses find sufficient sale to support your family?"

That chicken, my amazement, and biting my lip was occupation enough for fully three minutes. I wanted to explode, to go up on the hill and throw my hat into a tree, and yell to somebody or nobody—I didn't care which.

Who says a naturalist doesn't have fun and cannot rise to an occasion? It may have been deception. Or was it mere courtesy to a guest? I accepted the statement on face value, and I put on a solemn countenance, and fondled that chicken, one of my pets, as

THE SPIRIT OF NATURE STUDY

never before. I think that bird must have been surprised. If it was not, it was no fit companion for me.

But my legal questioner solemnly continued: "This is an illustration of the old saying that no matter how simple a thing is, if you perform it incomparably well, there remain fame and riches. Wasn't it Emerson who said of this, 'Though you live in a forest and make a good mousetrap, the world will make a path to your door'?"

I couldn't stand the serious strain any longer.

"No, no. You are wrong there, my friend; that path, though distinct, was made by carrying ashes to the barrel, by the cats chasing the rats, the dogs chasing the cats, and my chasing the dogs. Lots of rabbits here; can't have dogs about."

I verily believe then he thought I was joking, but he accepted the chicken hypnotism in all seriousness.

Thus I added another specimen to my "as others see us" list. A naturalist is a chicken hypnotist. Perhaps he is. It isn't strange if he keeps chickens. Surely no one else tries more faithfully to influence minds.

But he does not always succeed as he in-

THE FUN OF BEING A NATURALIST

tends, with the minds no, nor with the egg basket either.

But the funniest fun for the naturalist is his position as a center for all sorts of gifts. Like the old-time minister (as an "easy mark" for donation parties) he never knows what may come in next, literally from the heavens above, the earth beneath, and the waters under the earth.

The general naturalist is fond of proclaiming that everything is "fish" that comes to his net. He claims to take an interest in everything and the public takes him at his word! He is deeply grateful for all this, like the ministers who found "everything useful somewhere," and has most cordial gratitude for all donors, nevertheless he enjoys also the funny, sometimes absurd, phases. Not the least of these is the current belief that the naturalist is especially fond of things commonly supposed to be most disagreeable to every one else. The naturalist receives caterpillars, cockroaches, bedbugs and other "bugs," snakes, toads, abnormal crab or lobster jaws, insect galls, fasciated limbs of plants, malformations, the disagreeable, the abnormal—all these far in excess of the things in which he is most interested.

THE SPIRIT OF NATURE STUDY

As the old-time minister gazed at thirty-seven pairs of slippers, sixteen smoking jackets, and forty-four bargain sale lamps, and wished for a barrel of flour and a few more tons of coal, so the naturalist looks at his piles of naturae monstrossus and longs for the gifts of normal things.

The naturalist needs no great stretch of imagination to regard his working headquarters as a second-hand store for all sorts of pets. But he smiles on serenely and takes it as a compliment that he has so large heartedness as to find room for every pet of which every child in town has become tired of or which an over-indulgent parent thinks the care has become too tiresome. The naturalist, overstocked with highest grade pets of all descriptions, always cheerfully finds room for every wornout mongrel dog, cat, rabbit, cavy, alligator, hawk, crow, and woodchuck. His heart is supposed to be unlimited in expansive properties, and so it is, but he sometimes has lots of fun stretching it!

But the fun is not always in the negative. The sun occasionally breaks through the clouds. Even while I was writing this article, the telephone bell rang, and a friend

THE FUN OF BEING A NATURALIST

inquired if I had room for a few choice chickens given to him by a friend, he had no room for them, did not want to refuse, etc.

Room? I should say I had. Who says the naturalist doesn't have fun? Bring on your chickens, any discarded diamonds, old junk gold, apples for dissection, potatoes for identification, mined carbon for ignition, American Beauty roses for inspection; it is then your naturalist will have fun; he just revels in "such things."

THE BEAUTY OF THE COMMON- PLACE

WHY is it that we go to the menagerie (to which we take the young folks, of course, for their instruction!) to see the wonderful and interesting animals from some *distant* country, when we have never seen or at least never studied the more wonderful and more interesting animals in our own dooryard? The members of the nearby fauna are not so large, indeed some of the most interesting are so small that they require a microscope with which to see them. But who ever went to a menagerie because the animals are big? We hardly admit that even with Jumbo, the attraction is chiefly in the size. We like to talk of the great intelligence of the beast and the wonderful adaptation of the "trunk" or proboscis. And this, too, when perhaps we have not even admired and have never learned anything about the complex structure of more wonder-

THE BEAUTY OF THE COMMONPLACE

ful proboscides of the flies, or the bees, or the probing bill of the woodcock.

Don't misunderstand me as decrying or belittling the gigantic animal, nor the interests connected with the worn-out rope at one end and the limp, writhing piece of hose pipe at the other. What I do decry is that we won't admit that we went to see mere size only. When it comes to intricate structure and wonderful adaptation of means to ends, your Jumbo is excelled by many an animal near your own doorstep.

Another much advertised feature is the gaping, cavernous mouth of the evil-smelling hippopotamus, or the rending jaws of the lion, or the vicious tiger. And yet, wonderful as these organs really are, they do not equal those of the pouched gopher, the chipmunk, the wasp, the cricket, or the grasshopper. The point I wish to make is, that we are too apt to think of beauty and interest as qualities belonging to the rare and the distant, rather than to the near and the commonplace. Not long ago I asked some young folks what were their favorite birds — especially young birds. The answers included robins, Baltimore orioles, scarlet tanagers, goldfinches. Yet when I called their atten-

THE SPIRIT OF NATURE STUDY

tion to it, they all agreed that a little chicken is the most attractive, lovable, hugable, young creature that flies. They were, indeed, surprised at themselves, because they had not thought of the chicken as a bird. It was so near at hand, so familiar, and indeed by some so much loved that they had even forgotten, and could with difficulty realize, that a chicken is a bird. They had become accustomed, probably as the fault of some adults, to think of the chicken as too commonplace, too utilitarian to be entitled to any attention as a bird. But your true fancier, true lover of the back-yard fowls, never forgets the fact. Over his favorite he exclaims to you, "Isn't that a beautiful *bird*?"

Again, I inquired of the young folks, "What is the most decorative and attractive member of the vegetable kingdom?" Preferences included violets, daisies, lilies, forget-me-nots, roses, and carnations. Then to change the current of thought, I put the question in this form: "The most beautiful must be the one that the owner of a handsome estate, or that a lover of country walks or country drives would be least willing to dispense with." Then the answers (some

THE HARMONY OF THE BEAUTIFUL.

To retain beauty, spend some time every day among beautiful things, even if special effort is required to attain it. To preserve the esthetic faculties is even more important for success and happiness, than to enlarge the intellect.

"Ruskin's love of the beautiful gave his whole life an indescribable charm and loftiness." The loss of esthetic faculties is thus lamented by Darwin: "If I had to live my life again, I would have made it a rule to read some poetry and listen to some music at least once every week; for perhaps the parts of my brain now atrophied would thus have been kept alive through use." What better poetry than that of bloom; what sweeter music than that of birds?



THE BEAUTY OF THE COMMONPLACE

not carefully considered, and eliciting laughter) ranged through geraniums, century plants, ivy, apple trees, maples, elms. Yet when I questioned them, each admitted that it would be possible to have outdoor beauty without the one that he had chosen. There could be a beautiful estate without a geranium, or a century plant. Any special kind or even all that had been mentioned might be omitted.

Think for a moment, you grown-up lover of nature and of suburban life—what is the most decorative, most indispensably decorative plant?

Isn't it the grass? The young folks were pleasingly surprised at the suggestion, and wondered why they hadn't thought of it, for they unanimously agreed that the grass is beautiful, not only when in flower, but in leaf. Yet why wasn't it the first to come into their minds, and into yours also, when questioned about the most decorative plant?

Ruskin has written a magnificent eulogy of grass. Here is a quotation from what he says:

"The Greeks delighted in grass for its usefulness; medieval, as also we moderns, for its color and beauty. But both dwell on

THE SPIRIT OF NATURE STUDY

it as the *first* element of the lovely landscape.
. . . Gather a single blade of grass, and examine for a minute, quietly, its narrow sword-shaped strip of fluted green. Nothing, as it seems there, of notable goodness or beauty. . . . And yet think of it well, and judge whether of all the gorgeous flowers that beam in summer air, and of all strong and goodly trees, pleasant to the eyes, and good for food—stately palm and pine, strong ash and oak, scented citron, burdened vine—there be any by man so deeply loved, by God so highly graced, as that narrow point of fluted green.”

[Read the whole of his loving eulogy of grass, “Modern Painters,” Volume III., Part IV, Chapter XIV, sections 51 and 52.]

WAS THE BEAUTY OF THE BOUQUET GENUINE OR HYPOCRITICAL?

THIS bouquet was much admired at a city social gathering. Cultured men and women praised the finely-divided, delicately-tinted and perfumed flowers, and expressed much delight in the luxuriant leaves.

“What is it?” “Where did you get it?” “Greenhouse or outdoors?” These were among the many questions asked.

The host replied, “It’s buckwheat—grown in celebration of boyhood days on the old farm.”

“Oh, is that all!” “What a good joke!” These were the laughing exclamations.

Will the reader please tell why more was expected, why the joke, why the laughter?

THE NATURAL HONEY-BEE

A FRIEND, much interested in the study of honey-bees, recently was discussing by letter the merits of my new Educational Hive. This hive, by the way, is a somewhat elaborate and intricate structure, and designedly so, as it is intended for certain researches in the psychology and the physical activities of the honey-bee, and for the special exhibition of results attained in these experiments.

My friend closed his letter with this sentence, "After all, there is no better observation hive than the simple plain one that holds one frame lifted out of a regular hive."

I want to take this sentence as a text for an iconoclastic sermon on some current notions about observing bees. I have seen these single frame hives exploited at fairs, in laboratories and in homes, and so fully and frequently described in various books and periodicals that I can easily understand

THE NATURAL HONEY-BEE

how the mere mention of "observation" and "bees" brings up the time-honored one-frame-glass-side contrivance. It seems to be so firmly established by conventional use, that nearly all apiarists have come to regard the one-frame as sacred to the observation of bees. It has been hallowed by so long use, that one must be an idol smasher to venture to say anything against it. But I am going to venture, and I tell you at the very first, that, except for certain experiments where it is necessary to have the bees constantly in sight on only the two sides of one comb, it is the most worthless thing ever devised.

"But," and my correspondent made this retort, "it's so very simple—there is the comb, there, the bees; all you have to do is to look at them." Yes, very simple. Apply that same principle to any other branches of natural history and you have equal *convenience*, and equal total absence of all naturalness. Grow the plant only in the pot where you can conveniently sit down by it and look at it; study the squirrel or the rabbit or the bird only in a close cage where there isn't room for the prisoner to turn around! No one agrees to that. The

THE SPIRIT OF NATURE STUDY

best place to study any aspect of nature is where there is good observation with the least hampering by artificial conditions.

For the ideal observation of honey-bees we need a transparent hollow tree in the forest. There the bees are in their natural home. They build combs just as they want to build them, not within the rectangular confines of an eight by seventeen.

Not long ago a veteran bee-keeper told me that he took a colony of bees from an attic, where they had been for many years. "Well," said he, "you should have seen the funny forms of those combs—most interesting thing I ever saw. There was one pillar almost round—a solid center right up and several feet long,—and then combs around that, the most fantastic shapes you ever saw!"

You, my reader, should have seen the face of that veteran bee-keeper! It fairly shone with enthusiasm. And the whole secret of it was that he had got near to the heart of real unconfined nature. When we do that we are all enthusiastic. He had seen the work of bees when they were free to follow out their own "notions," and to adapt themselves to a natural environment, with plenty of free space.

THE NATURAL HONEY-BEE

These conditions prevail within the cavity of a hollow tree, the honey-bees' natural home. But they do not prevail within the eight by seventeen Hoffman frame closely cramped in between two sheets of glass. In such unfavorable conditions the bees build no side combs; they must even attach the edges in the most conventional and unnatural manner. It is true that here one may study the action of the queen or of any particular bee, but it is at the total sacrifice of ability to study comb architecture or the work of the colony as a whole. As I have already said, the ideal hive would be a transparent or glass tree; but this statement is true only so far as the bees and form are concerned. For us the circular glass sides would be disadvantageous, as they would reflect and refract the rays of light in an undesirable way.

To meet all the conditions of naturalness and of abundance of room for the bees, and of convenient seeing for us, one of the best hives that I have discovered is an inverted, rectangular glass aquarium. It may be bought at a moderate price.

The aquarium may be placed on the window sill and elevated slightly at the side

THE SPIRIT OF NATURE STUDY

nearest the window, so that when the latter is raised an inch, the bees may pass in and out. If desired, the bees may be kept for some time in confinement, by raising the aquarium an inch on blocks and using a strip of wire-screen cloth to prevent the bees from escaping. When confined, the bees should be fed a syrup of equal parts sugar and water. A frame or two of bees may be purchased of almost any bee-keeper for a trifling sum.

Put within this glass aquarium some rustic supports, to represent projecting, undecayed portions of the inside of the hollow trunk. Keep all covered by an opaque cloth when not observing what is going on within this glass bee-home. Then the bees will be free to work, and to adapt themselves to the environment. They can suit their own fancy about attaching combs to the sticks; they may build diagonally or in any other form that they may prefer, and they may attach the comb to sides or ends just when and where they think it is necessary. In the artificial hives the combs are attached only at the edges, but in natural conditions within the bee tree, or in its counterpart, as represented by the old-fashioned box-hive

THE VEIL OF THE SPIRIT OF NATURE.

"Running water is one of the universal parables appealing to something primitive and ineradicable in human nature. Day and night it preaches—sermons without words. It is every man's friend. The most solid find it good company. For that reason, largely, men love to fish. They are poets without knowing it. They have never read a line of verse since they outgrew Mother Goose; they never consciously admire a landscape; they care nothing for a picture, unless it is a caricature, or tells a story; but they cannot cross moving water without feeling its charm."—BRADFORD TORREY.



THE NATURAL HONEY-BEE

with opaque sides, and in our transparent inverted aquarium, the bees can build combs and attach them in any way that they see fit. And herein lies the interest of the study—to see “what they will do next.” What’s the next “move” in the game? How overcome this or that obstacle? How fit into this or that nook or cranny? And here a number of other interesting questions may be readily asked and answered.

One of the most interesting objects for study is to note when the bees think it necessary to put out a *side* support from a *long* comb. They seem to believe that they are really within a hollow tree, and that it is likely to be swayed by the gales. Of course, when so swayed, long combs, laden with honey or with young bees, would be too much for the unyielding rigidity of the upper part of the combs. These, if they have no side stays, would bend, crack, and be crushed against one another. The bees have learned this, and give the combs a firm support whenever it is necessary. They do this, it is true, to a certain extent, in the regular eight or ten-frame hive, but not with the naturalness with which they do it in a large, unobstructed space.

THE SPIRIT OF NATURE STUDY

One of the most interesting observations to be made with such an aquarium is the manner in which bees extend the edges of the different layers of comb, and how the cells are drawn out as needed.

Sometimes the worker bees get ahead of the queen, and have a large number of completed cells awaiting eggs. These are busy days! I like to fancy some vivacious daughters calling out, "Hurry up, mother, we are away ahead of you. Don't you think you ought to be proud of the activities of your enterprising children?"

But, leaving out the play of fancy, I am wondering if the worker daughters don't in all literalness hasten the bee-mother's actions by increased care and abundant food. In the most prosperous days I note that the queen has the closest and most assiduous attention.

And then I can fancy a grin on the old lady's face, and I dream that she says, "Here's one on you, my girls. Think you're mighty smart, don't you? But you can't beat me all the time. Why don't you hustle along and make wax?"

I say plainly that this is only fancy, for I never have knocked for admission at the

THE NATURAL HONEY-BEE

study-door of the modern writer; of natural history fiction and romance; for if I had but stood by the door ajar, I should, in imagination, have heard in the hum of the hive all these words, and in the waving of the queen's antennæ should have seen an exhibit of real fun-making gestures. But I fancy that there is something that looks like play when the queen is putting eggs in cells only a little way drawn out, and when I see no completed nor even half-completed cells left empty in the hive.

But, as I study and dream by the side of my colony in the inverted aquarium, I am careful to keep the knowledge and the fancy in entirely distinct compartments of my brain, and with my pen to open the doors only one at a time. Then it seems to me that such fancy is commendable.

To you, my reader, I say, if you will study or dream—seeking happiness in either alone or in the two combined—get a glass aquarium and a colony of bees. And the more you study and fancy, and then prove or disprove the truth of your dreams, the more surely will you agree with the Reverend John Thorley, who wrote almost two hundred years ago:

THE SPIRIT OF NATURE STUDY

“In that innumerable Multitude and surprising Variety of Insects in the World made for the service of Man, Bees are most to be admired; there are none that can equal, much less excel them; as by the painful Labours, and plenteous Collections they contribute and minister not only to the necessary Supports, but also to the pleasant and delightful Accommodations of Life.”

THE FIRE OF LOVE

IT was Hallowe'en. Pearl and the other little folks had been promised a bonfire.

Impatiently they had waited for the deepening shadows of twilight.

Several weeks ago a small tree had been felled, and left to dry by the corner in the wall across the road. Leaves and papers had been thrown in and all reserved for this occasion. Down by the ground were the three or four long pieces of the trunk, measuring perhaps from eight down to five inches in diameter. Crosswise above these were larger branches, some five feet in length. And thus farther and farther up and out from the center of the pile the wood grew smaller, till the outermost parts of the hemisphere were tiny twigs with here and there a rakeful of weeds and leaves pushed in between.

For a Hallowe'en fire nothing could be more inviting. Joyously and playfully the tiny blaze darted upward in spreading rami-

THE SPIRIT OF NATURE STUDY

fications like the tree in its first year from the seed. Soon these little flames almost encircled the pile. They darted hither and thither; the dead leaves crackled; the wood snapped; the flames roared and shouted in fiery laughter, until the whole world seemed brighter and cheerier. This was the bonfire for the little folks who came from up and down and across the street, chattering, whistling, singing, hugging one another in childish glee, the girls waltzing, the boys jumping and howling as only boys can howl, or, hand in hand, circling around the pile like nocturnal fairies around the proverbial witch's caldron. A happy, loving time it was for the little people. A Voice from an open window said, "How fond those two little girls are of each other! Aren't they having a good time?"

The flames flashed up brighter, as if preparing to devour the larger branches. Down the street came the boys and the girls from the High School, in even number, two by two, not in the reckless rush of the little folks. They stopped to chat and to admire. Teasingly a larger boy chased his favorite girl with one of the burning, larger twigs, snatched from the pile, just as it was catching fire.

THE FIRE OF LOVE

And as they passed on, the Voice from the window was heard to say, "Coming love casts its light before."

I walked around the pile and poked the falling twigs nearer together and the flames crept in deeper.

Two lovers came along the street so intent on their own conversation that they hardly noticed my fire, though the flames were taking hold of the larger branches in real earnest. They paused for only a moment, to say, "How do you do?" as I pushed the flaming branches into the very heart of the pile. Though my fire was the most showy of all that evening's burning, and burned it ever so fiercely, it could not hold them. Down the sidewalk they went, and the Voice from the Window said, "They don't need your fire. They have given a good start to one of their own."

The fire reached farther in toward the damper branches. How they sizzled and snapped and cracked, how the bark curled, and little jets of steam puffed and hissed. But in spite of all this the fire burned on. I paused for a moment to speak with a bride and groom that stopped to look at the blaze. They seemed not so intent upon each other

THE SPIRIT OF NATURE STUDY

as were their immediate predecessors. They had more time to examine my work.

I noticed that the fire gave a fair prospect of using up even the larger, greener limbs, in spite of the noisy puffing of steam jets and the hissing of the damp bark.

As the bride and groom passed on, the Voice from the Window observed, "So Mr. and Mrs. — favored you with a call. They still seem quite lover-like and happy, don't they? How long have they been married? Only three months? Oh!"

A well-known business man, with his wife and children, stopped to see the fire. "Pretty hot," he said, as I stirred up the larger branches. "Yes, it is getting under headway so real and earnest, that I find it difficult to stand near by. There is not much show, but it is true fire."

As they passed on, the Voice from the Window exclaimed in admiration, "Well, if they aren't well fitted to each other, then I never saw two that were. Why, they even look alike."

My fire burned fiercer and hotter. It was now well enfolding the largest portions and radiated heat to a long distance. An old man and his wife stopped to look. It made him reminiscent. He told of his boyhood's

THE FIRE OF LOVE

fires, and she, as an experience of her own, spoke of the bonfires that she had seen sixty years ago. How hot was my fire—too hot, with not enough show to please the young folks, for they had all gone. I sat there on a ledge near the margin of the glowing ember heap, and listened to my old friends' tales of long age. The shades deepened about us, but the fire grew hotter. I stirred up the fierce coals and the flames flashed high, illuminating the surrounding space almost as brightly as before. Long my friends lingered, and late in the evening they went home. As I entered my own house the Voice from the Window said, "How long they stayed. They seemed to like the fire better than any of the others."

"I am sure they did," I answered.

It was nearly midnight. As I looked from my own special window, the embers of the old logs were still glowing. They, of all my fire, were the most lasting, and most pleasing and the most suggestive. They shone with a steady glow, and exhaled an even heat. As they slowly faded, and the gray ashes covered them, I leaned further from my window to catch a last glimpse of my two old friends as they vanished into the night. They were walking hand in hand.

THE BROOK AND THE STONE WALL

PART I

AUTHOR'S NOTE.—“The Brook and the Stone Wall” is designed to represent country life in reminiscences, incident, pathos, humor, varied scenery and, may I claim, too, just a touch of the poetical. It is a parallel of nature and human nature. My walks in woods and fields bring up memories of the past. The different seasons remind me of different ages of human life. The brook—laughing, singing, sparkling, capricious, is feminine. The stern, rigid, strong, grave stone walls are masculine. I find the two characteristics associated in all ages—in joys and sorrows—in all seasons, in the fields, in the forests. I have noted strange, joyous, and pathetic phases of the brook and the walls and of their representatives. Some of these I have tried to portray in six vistas.

Vista I. Building the Waterwheel

“I’M right glad spring’s come, so’s we can go barefoot. Will your mother let you? Mine said I could a little while to-day. How long can you stay over? I guess it’s all right anyway. Take off your shoes an’ come along.”

THE BROOK AND THE STONE WALL

Tip's nimble fingers (everybody called him Tip, which was "short" for Jeremiah) had already unlaced one shoe and had the stocking half off.

Sam, who had come over from the 'Cowles' place" to play with Tip, had no doubt about liking spring, nor bare feet either. "Seems like summer back of this woodshed. Course she won't care, when she knows it's all right. Say, let's go down back of the garden in that brook and wade, don't you know? Where we got that turtle last year."

"I'll tell you what's better—let's build a dam—I'll take my spade and you this mallet and some sticks of wood, few of those boards from the hen-coop—pop won't care—said so—told me to chop 'em up for the brick oven—we'll get the stones from the old wall—all tumbled down anyway—an' we'll get the girls to help—they're down there somewhere after pussy willows—wonder if we can have a few nails, too?"

"What do you want them for?"

"'Cause we want them to build a dam with—don't you know how to build a sluiceway——"

"Yes, an' we'll have a waterwheel, too;

THE SPIRIT OF NATURE STUDY

just think of it! a real waterwheel with a crank on the end——”

“And I’ll get a strip of tin—cut it out of the bottom of an old tin pan—make notches in it, and put a hole in one end, and we’ll get a framework around it, and a ‘way’ up and down—we’ll put some grease on the sides so it’ll go up an’ down—and then we’ll saw logs—Nan and Sue’ll help us—and—and—and—no, we’ll have ’em sit on the bank—they’ll want to ’range their pussies—and they can stop once in a while and hand us the tools as we call for them—we’ll be the boss carpenters, you know——”

“I’ll tell you what we’ll do then, we’ll chop down some of the alders—they cut easy and I can cut them with my hatchet—and we’ll saw them into beams and boards and shingles, and we’ll build a house and we’ll be big men of the town, and, say,” and they stopped and Tip looked Sam full in the face and laughed—“and we’ll have Nan and Sue for our housekeepers.”

How sharp and crisp was the chink of the stones as they fell from the top of the wall and tumbled along the brook, seeming to catch enthusiasm from the boyish hands that rolled them. The brook bubbled and eddied

THE BROOK AND THE STONE WALL

around the alder clump, and girlish laughter trilled and rippled in harmony with the music of the stream.

But the brook flowed on. The Virginia creeper and decaying, lichen-covered fence brush filled the gap in the stone wall. I struggled through the alders and birches that grew from crumbling stumps and seemed no larger than when I last saw them; I found a bit of tin, a rusty hatchet without a handle (the stern words of reproof seemed but of the day before), a mass of stones in the brook, blocking the freshet deadwood, and among them I viewed a panorama of years long gone, and once more heard shrill voices that long ago were stilled forever.

Vista II. Catching the Woodchuck

Putting cornstalks into the furrow, so as to plough them under, is not exciting work for a farmer boy of thirteen, but getting woodchucks out of a stone wall is. It is more than exciting, it is a joy so keen that it never fades from memory, an unselfish joy.

THE SPIRIT OF NATURE STUDY

For that reason, Charley called excitedly and joyously to John across the field:

"I say, the dogs have got a woodchuck in the division wall and father says you an' I can go get it out; come over quick an' help."

Of course there must be two boys because there were two dogs, although there was only one woodchuck in one wall and the stones were not very large ones. The lessons in school that week, even the teacher's name, all have faded from the memory, but Daisy's peculiar bark, the glistening in Don's eyes, how Charley's foot caught in the grapevine and he fell in nearly a complete somersault, the first sight of the woodchuck, the sound of his gritting teeth as the last stone was lifted from his retreat in the very foundation of the wall, lower even than the surrounding ground, the peculiar yellowish red of that stone, and the bits of dried leaves that had sifted on it—all such details were at that moment indelibly imprinted on the memory.

"Careful! There he is, don't you see, back under that big stone? Take off a little more, there! so's I can lift this flat one, and then the dogs can get at him."

And they did get at him through the narrow opening. Daisy snapped her nostrils

THE BROOK AND THE STONE WALL

till the blood flowed, and as the terrified, chattering, angry woodchuck leaped forward, secured a hold that was a hold indeed. Then the pull began, Charley wrestling with Don to hold him till Daisy could pull the maddened creature further out, and John pulling on Daisy's sides with firm grasp of the long hair, till the crisis was passed and something happened, when something let go—no one could tell what, for John went backward with Daisy and the woodchuck over him, Don broke loose, and Charley was recovering himself from among the broken stems of last year's goldenrod on the farther side of the wall.

Only one phase of the scene is destined to play treachery with memory. Reason will demand the belief, strong impressions to the contrary, that on that beautiful May day, there were not a score of woodchucks and twice as many dogs swarming around that wall like bees around a hive.

The scene resolves itself into two boys, one carrying a woodchuck by his hind legs, and two lolling, frothing dogs, trotting down the path, through the ravine, toward home.

"Dogs shook a lot of blood over you, didn't they, Charley?"

"Golly, I should say they did; no 't isn't

THE SPIRIT OF NATURE STUDY

either; knocked the skin off two of my knuckles and smashed the end of my little finger; didn't know before that I got hurt with that blamed big stone that fell back."

"Say, there's Emma and Alice digging dandelion greens over by the spring. Let's jump across the brook and show him to them." And the brook long ago, like my memory to-day, mirrored the scene as the four walked along its bank. Was conquest ever more complete than in the bloody capture of that woodchuck—was praise ever more relished than that from those girls? It was unalloyed pleasure and great enough for many a day, enough for a lifetime.

The hillside is so overgrown with bushes that I can't see the brook from where I stand. The wall is more thoroughly covered with lichens, and the stones, surely they have grown smaller! Everything is changed except the picture in my memory, but there the light is so dim and the shadows are so dark that I can hardly tell whether I am happy or sad.

As I stopped to rest against the cemetery wall, it was Emma Wharton's name on a marble slab that brought tears to my eyes,

THE BROOK AND THE STONE WALL IN THE LOW- LANDS.

"Young eyes may see what has been previously overlooked, and certainly not all the discoveries in natural history have been made by men old in the service. Certain of our faculties grow less alert with age: the sight, dim; hearing, less acute; and the sense of smell equal only to detecting the more pungent odors. When this is true, it is safer to send a boy of seventeen into the marshes to report their belongings than to trust to the observations of a man of seventy." —DR. CHARLES C. ABBOTT.



THE BROOK AND THE STONE WALL

for the stone was stained and leaning, neglected and forgotten. That must be changed. A quiet word to the sexton, a trifle of money will do it, and I can supply them. Yes, Alice is married—got a good husband—lives in Salem last I heard from them—and Charley has a sheep ranch in California, haven't seen him for years. I wonder if they ever think of the old stone wall and the brook, and—and—me. But I mustn't sit here dreaming; catching cold now, I see; wouldn't have caught cold in those days; perhaps this is a different kind of a May day—sunshine seems to look different.

Vista III. Hanging June Boxes

Never were corn rows hoed as were ours on that June morning, because Herbert and I were excited. The evening before, May baskets, odorous of lavender leaves and caraway seeds, had been hung on the front door by the dainty fingers that had fashioned them.

“I say, but couldn't they run! I heard one giggling, and I'll stake all my old shoes that

THE SPIRIT OF NATURE STUDY

it was Betsy and I think Delia was with her," positively, but somewhat abstractedly, exclaimed Herbert, as he carefully pulled up a hill of corn, tossed the slender blades into the briers, and sifted a hoeful of moist earth around a bunch of pigweed.

"It's a shame, too, to think that they—oh, oh, o—o—o—" and I went hopping off with one hand on the hoe handle and the other clasping my toes.

"What in thunder's the matter with you?"

"Matter? can't you see? I should think it was matter enough—look at my toe! I was so blamed mad to think how they got the best of us by coming the last day in May so's we couldn't return them, that I brought the hoe down on a toad, and it wasn't a toad but my big toe sticking up out of the dirt."

Now Herbert and I had always been friends, so he should have been sorry, but he wasn't. That was the trouble. He just laughed. I could have borne a little laugh but that wasn't his style. He leaned back on his hoe and roared. And it made me mad, yes, clear through.

"You blamed old fool," I sobbed, and pelted him with a hunk of turf. But that made him laugh the more. I grabbed a

THE BROOK AND THE STONE WALL

dead sassafras limb and limpingly started toward him. He knew I meant it, too, because I chased him half-way across the field. "Hold on, Ralph, hold on," he pleaded, with one hand up to ward off the blow, "I didn't mean to make you mad, but it was enough to make a horse laugh to think of your trying to kill your own toe. Let's go up in the shade and rest awhile."

"But I hate to get in a tight box where I can't get out and I was just mad to think——"

"But wait," interrupted Herbert, "your speaking of a box reminds me what's the matter with June boxes? I've heard of them. Fix 'em up with flowers an' pot'ry an' lump o' sugar, and things just like a basket."

And then we hoed and we talked and we planned, and after milking and supper, we fixed 'em up and started out. The boxes were fearfully and wonderfully constructed, and destined to be hung in the same manner.

Herbert and I could have taken first premium that night for "righteousness" for we were "as bold as a lion when no man (nor girl, either) pursueth." But to think of the possibility of being caught by those girls—Oh, the everlasting ignominy of it.

THE SPIRIT OF NATURE STUDY

That is what can make the heart go pit-a-pat and bring it up a wabbling, choking lump in the throat.

"Of course, Herbert, I'd be willing to hang it and run any other time, but my toe's awful sore and I can't run to-night."

"Y-es-s-s- o'-o' course, I'm perfectly willing—I can run better'n you can, anyway—so, of c-c-c-ourse, I'm willing to hang them."

But how still and dark the house was, not a light in the front part, just a feeble glimmer in the ell and a dim lantern, swaying as it was carried by some one out in the barn-yard.

"It's all right," I added encouragingly. "Girls' gone away and women folk out in the kitchen. Uncle John hasn't got his chores done yet. Hang them on the front door and run—nobody there to run after you—but then you better run for some one may be around—run for the brook, and we'll get down among the alders and hide. They can't follow us in the water, and we're bare-foot. You know it is in the rattle-de-bang part of 'Tam O' Shanter' that Miss Virian, the city boarder at Mark's, played for us the other night. She said if Tam could get over the brook, he'd be all right. If not,

THE BROOK AND THE STONE WALL

the witches would have him. I guess we'll be in the same fix."

Of course we didn't know—how should we, we weren't consulted?—that our Mary had overheard our plans at the supper table and told the girls' big brother when he came up after supper to see if he could borrow our cultivator. How surprisingly dark was that house.

Herbert crept up, hung the ribbon over the latch and then—but his knock was lost. To our excited imagination, it seemed as if all the girls for five miles around screamed, shouted, squealed, and giggled from the suddenly-opened windows, and if the roof had suddenly opened, no more pans, wash-boilers, and old sleigh-bells could have been launched forth than jangled out of those windows.

And how they shouted! They knew us.

"Go it, Herbert!"

"Run, Ralph, for your life!"

And we did run, you can bet on that. The witches were after us and a brook was near, but the vixens were nearer to Herbert, poor fellow. He saw he couldn't reach the brook and the protecting alders, and he attempted to jump the wall. Sprawling

THE SPIRIT OF NATURE STUDY

from the top, he fell on the other side. How those stones did tumble and roll down the hill; their echoes haven't stopped yet.

But I, well, I thought I could jump across a Niagara. I could have jumped that brook. I knew the stone on the other side at that particular place as well as I knew the doorstep before my own home. But the girls were too near, and I hadn't taken into account that pesky, clinging smilax. I landed with one foot suspended in air, the other kicking the stone, head half the time under water and both arms in the mud. I surged forward, pulling at the leg, and then pulled backward, spitting and blowing among the pond lily pads to keep the muddy water out of my mouth—"bobbing for eels" is the droll but expressive manner in which Uncle John afterward described it, when we were both brought captives to the kitchen. Fortunately the water was not deep, and more fortunately Betsy and Delia were not far behind. It needed two, one for each leg.

The other girls were caring for Herbert. When I saw him around the next day with a bandaged ankle, it was mean, I know, but I said to myself, "That's what he got for laughing at my lameness." But Anna was

THE BROOK AND THE STONE WALL

a good nurse. I hope he has fully recovered—he must be by this time, as she has had the care of him for about thirty years. He is in Boston now, an expressman, doing well, I'm told. He should be; he had some experience in delivering boxes in his younger days.

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The other day Delia, Herbert Junior, and I took a long train ride, got off at the village station, engaged a horse and carriage and drove out to the old farm.

Our youngest was eager to see the scenes of my boyhood about which I had told him. He is an active interrogation point, and works up to the full capacity of his talents.

As we drove over the old bridge, our youngest said, "Say, papa is this the brook where you used to catch those big trout?"

"No, my son, that was on my farm; these were your mother's fishing grounds, and I can vouch for it, that she once skilfully landed a very fine fish from that pool."

And the rippling laughter of the brook and water-witch retained their youth and renewed mine. Thirty years jumped back instantly. Brook, wall, Delia, and I had not grown a day older for thirty years.

THE BROOK AND THE STONE WALL

PART II

Vista IV. The Falls and the Ruined Walls

IT was almost chore time when father got home from the village. I was helping him unharness the horse when he said, "I came round by the schoolhouse road this afternoon; what a wilderness it has grown to be! Bill was at his cabin at the old Uncle Rufus garden, and told me to tell you to come over there this evening, bring your gun, and he thought you and he could shoot a hawk on its nest by moonlight."

"That's good!" I exclaimed. "He told me about it three weeks ago, but said I had better wait till the young ones were hatched out."

"Yes," father replied, "I told him I'd be glad to let you go, because it is probably the hawk that has carried off nearly all the chickens of old Specky and the best bantam in the flock. I saw her swoop down and take two, but the pesky weasel in the stone wall back of the pear tree may have had a hand in the matter."

So I hurried the milking, didn't have much

THE BROOK AND THE STONE WALL

appetite for supper, as I remember it, and rushed out of the kitchen while all the rest were at the table.

"Hold on," protested John, the hired man. "Needn't be in such a gol blamed hurry as to knock a fellow off his chair and choke him to death with cold potato," and he half angrily and half jocosely continued as I squeezed, with the gun in my hand, by the corner of the table near the chamber door. "Say, you don't expect to run down that old hawk like a hound after a rabbit, do you? Well, I guess you better, after all, for I'll bet that yer couldn't hit the broadside of a barn if it was all covered with hawks; there you go, jamming the fork down a fellow's throat—yer the craziest boy ever I seen when there's any talk about shooting."

He may have said more, but I couldn't hear it when I was around the house, through the gate and hurrying across lots for Bill's old cabin. Now Bill's entry on the town books of Goshen where, he often told me, he was born, made him sixty, and I was sixteen, but every fishing pond, brook, squirrel nest or partridge snare for ten miles around had entered us for several years as the same age, about ten.

THE SPIRIT OF NATURE STUDY

"Hello, Jim, glad yer come over. Told yer father we better tackle it this evening—full moon—and the young ones about right size—will fly in a few days, I guess. Tige, you just get down, behave! there, do you see that's what you'll get when I tell you what to do. Rover, here-r-r-e-e, stop chasing that chicken! Bedlam's in ye to-night, I should think, but you can't go, either of you, do ye understand? Needn't shake yourselves all to pieces, either—you'll keep house—scare off the tramp—no danger of 'em, yah? Ha, ha, ha! Nobody's come where Crazy Bill is, especially at night—nobody but Jim, and he's as crazy as anyone—ain't that so, hey, Jim?" and he emphasized the inquiry by a slap on the shoulders that pitched me forward on the slab bench by the window.

"Look out there—what yer doin'—nearly knocked over that geranium," and Bill grabbed me by the shoulder and whirled we around in a manner to send me spinning into the opposite corner by the supper table. I liked Bill, rough as he was, yes, I even enjoyed his peculiarities that people called "crazy spells," but I didn't like the peculiar gleam that came into his eyes at times, and often I thought him a little too rough in

THE BROOK AND THE STONE WALL

testing my grit. "Yer welcome here, boy, yer knows that, but hain't I told yer to look out for that geranium? Of course you didn't mean to, but if you had—the man or the boy that would willingly—willingly, I say—knock off that geranium—I haven't tended it and the cuttings in the other pots for more than twenty years—I make due allowance for an accident—would die on the spot, or my name isn't Bill, Crazy Bill, yah! Ha, ha, ha, ha! Square yourself, boy. Come to think of it, you haven't had your boxing lesson to-day."

I was glad he changed the subject, but it was almost out of the frying-pan into the fire, for Bill's boxing lessons were a little too rough for even a hardy country boy of sixteen. He always started in all right, evidently, as I distinctly recall it, a thoroughly-skilled boxer, but in about five minutes he seemed to forget himself, and he began to spar with somebody far distant in time or space. From my standpoint, the distance soon became about ten feet to the side or corner of the room to which he had knocked me. He never meant to harm me, I'll give him credit for that—would usually strike by a kind of shove against breast or shoulder.

THE SPIRIT OF NATURE STUDY

"Just to try your nerve," he always explained when I protested. This time I brought up against the table, nearly knocking it over.

"Thought you hadn't been to supper. I didn't forget to give you a bite—that's my way of asking you to take some of that skunk. I shot it to-day down near the brook."

"All right, Bill, I didn't have much supper—was in too much of a hurry. I'll take a bite of your Johnny-cake, but you know I don't like skunk very well."

"Can't say's I especially hanker after it, but, after all, I do like to put a charge of buckshot into one. Like to see the dogs shake 'em when they catch one and then run their mouth, now this side and now that, along the grass, as if they were mighty sick of the job. I like to skin skunks and drive the nails through their tough old hides—have got the south sides of my shanty nearly covered with them. Say, you know what a beautiful animal a skunk is? How meek and amiable they are, and how they can amble along so kitten-like, mild-eyed, and meek as Moses, and sometimes they'll draw their lips to show their teeth, at one view a smile and at the same time I'd like to bite you, and some folks say it doesn't mean a

THE BROOK AND THE STONE WALL

smile, but a regular hydrophobia bite, and then what gentle-looking eyes, just watching their chance for aim to let go that infernal battery of theirs. It's their protection. Natural law gives them the right to do it. But I just hate a skunk; suppose I ought not to hate any of God's critters, but I do, whether they're here in the fields or down in that ravine by the brook, or—I watch 'em sizzle in the frying pan—that one's cooked well—Tige doesn't like it—I do fairly well—but neither of us have ever tackled a skunk but we've got the worst of it, and *you can find skunks most everywhere*. Say, what are you loaded with?"

"I pulled the wad after chores to-night—we've kept her loaded for the hawks and weasels at the chicken yard—and put in some heavy buck about as big as peas."

"Good enough, Jim, that's the stuff, but I've got something better. I was 'er casting some balls for my old rifle, and I poured the hot lead left over after I filled the moulds into some cold water, and they all went into stars and spears and birds' nests and icicles and things. I dried them and then, thinks I, I'll pour about half a handful into each barrel—reckon they'll raise any hawk's nest

THE SPIRIT OF NATURE STUDY

they go up under. Come on. I've got the dogs tied up. It's just up above the falls beyond Randolph's ice pond, in that swamp not far from where your father buried the old bull."

"Say, Bill, how are we going to work it so's both will get a whack at it?"

"Sh-h-h, not so loud," he continued, as he grabbed me by the arm, "we're not so very far from there. You stop on this side of the tree, drop down on one knee with both barrels cocked, forefinger on first trigger and second finger on the other. I'll creep around to the other side and get in the same position. Then when I give a whistle, we'll let 'er go at once, four barrels."

And then I waited and waited. Surely Bill must have gone to sleep, no, there he was! What if he should get things twisted in one of his "spells," and think that the hawk was to whistle when he was to shoot across under the tree at me, but there was no time to think much about this, nor opportunity to plan any remedy; there was the whistle—BANG. I jumped; evidently neither had made a mistake, for through the rifts of smoke I could see falling limbs, twigs, leaves, and, best of all, as it seemed to me then,

THE BROOK AND THE STONE WALL

flopping mother hawk and the little ones, as they struck this limb and then that, on the way down to the ground about sixty feet below.

"Whoop! hurrah! Bill, we've got 'em!" I yelled like an Indian with his first scalp, as I picked up the motionless mother, and he struck two of the little ones with a stick as they were fluttering off into the bushes.

And then we took the path that followed beside the brook and curved around the ice-pond, and Bill told me how he saw the tail of the hawk sticking over the nest against the moon, and how he was delayed by a grapevine that twined around his neck.

"Say, Jim, but yer old dad'll be mighty pleased with our luck, won't he?"

"Yer right, Bill. What I wanted to do was to have him so well pleased that he'd buy me another half pound of powder and a few pounds of shot and a box of caps. I'm about out of everything," and then in a lower and less exultant tone, as mother instinct took possession: "Say, Bill, speaking of father, leads me to say that I couldn't help thinking as we came along, that'll be a rather sad home coming for the father hawk; perhaps he was not far away in some treetop

THE SPIRIT OF NATURE STUDY

and saw it all. And, then, too, I've been thinking what a clear day it's been, and how fine one of our best chickens must have seemed to them. What a day of prosperity it was, and then we, because we happened to have the power of powder and shot, smashed it all in a twinkling. Say, Bill, I'm glad we've got 'em, but I can't help sort of wishing they're back in that nest."

But Bill said not a word. For fully five minutes we walked on in the overgrown path. I saw Bill was waiting till we reached the cleared mound by the dam, and couldn't speak as he was busily engaged in poking away from his face the hanging vines, twigs, and cobwebs with his disengaged right hand.

"Sit down on the wall, Jim; let's rest a minute. Pretty good-looking place here by moonlight. I like to come out and sit here o' evenings. And sometimes I don't have my gun and I tie up the dogs at home. Just look at those pond lilies up there, back up the stream about twenty rods—things seem bright and pleasant there, don't they? Do you notice how calm and gently the water flows and then dashes down—smash—all of a sudden? What a crash! No wonder

LACE-EDGED "SPREADS" ON STONE TABLES OF
THE BROOK.

Jack Frost set this table for a spirited feast of the eyes
of Nature students.



THE BROOK AND THE STONE WALL

rough, rugged old stone wall's all gone to pieces. When I see that tumbled down wall of the dam and the sprayed and broken falls, I've wondered if it wasn't some dirty muskrat that first tunnelled through it—but wasn't that a good shot? Never saw one better. We made a clean sweep of that hawk gang, except the man hawk—we'll get him, too, one of these days, yah! He, ha, ha, ha! Jim, you're a funny fellow, tickled to think you had smashed the nest and kinder sorry to think about the father hawk, yah! He, ha, ha, ha! Well, never mind. Say, Jim, you're about the only one that ever comes over to see old Crazy Bill; don't stay away so long; can't yer come over and go fishing up the brook to-morrow, and I'll help you every day you want, setting snares?" And till we reached the cabin, he continued to lay plans enough to take every day that fall.

"Down, Tige! Down, Rover! Seems to me you're mighty hilarious to-night. Take hawks all home, Jim, and show your father, he'll like 'em, if you sort o' don't go o' pitying, yah! Ha, ha, ha! you're a queer one. So long," and Bill slammed the door, and I started home, then I turned and went

THE SPIRIT OF NATURE STUDY

back a few feet, thought for a few minutes, stopped, turned again and continued homeward.

We went fishing and hunting, but where we went, what we got, or what we talked about have largely faded away from memory, but the Bill I became acquainted with that night is distinct from the other Bill I knew for many years in that cabin. No wonder he is better remembered. Every placid pond above the falls and every ruined stone wall brings him to mind. And when thinking of him in after years, I have wondered more and more about that geranium, and why in all that time I didn't know him better and learn more of his history. And then it doesn't seem so queer—how little we know of any one's life, of the falls and the ruined walls.

Vista V. Indian Summer

It was just twenty-seven years ago that I went over this road. I remember it well. I was on a kind of "walk around," visiting the old haunts that I had known and loved.

THE BROOK AND THE STONE WALL

"I suppose, Joe, that things don't seem so strange to you as they do to me."

"No," said my companion in the carriage, "it makes me laugh to hear you exclaim about these old walls and rail fences changing so much. The schoolhouse brook, too, just the same as it was when we were school-boys together."

Turning a curve in the road, we came to a little red cottage. "Oh," said I, "here's where old Uncle Abijah Martin used to live; I had almost forgotten him, but now it seems only yesterday that he was teaching me to make baskets. Let's hitch our horse and go in and see him. He will be so——"

"See him! I guess you have forgotten that times have changed and that you are no longer a boy. Why, Uncle Abijah's been dead, let me see, nineteen years last spring. He was an old man when you left here."

"But who lives here now, and, say, what's the matter with that picket fence?" My inquiry and the reference to the fence made Joe laugh right out.

"Well, that's a funny thing. I must tell you," says Joe. "You remember Jack and Jacques Purple, the twins, as they used to be called. Well, they lived and lived and lived,

THE SPIRIT OF NATURE STUDY

how, I don't know, in the old Rogers' place, till the roof, piece by piece, and the sides, a part at a time, had tumbled in. They were driven into one room like rats in a burning house. The neighbors even thought of taking pity and getting them out—I mean Jack and Jacques. Rowlton Austin owned this house and he told them that they might come here and live. This sort o' brought them out into the light. People knew about them as never before."

I started to rein the horse out by the side of the road to hitch him to a wild cherry tree that grew near, but Joe pulled the left rein and said, "I wouldn't do it—they're queer. Better not go in to see them."

That fence, with the stones pushed in between the pickets and smaller ones closely arranged along on the railing, was indeed a novelty in fence building, rather pretty and rustic, too, it must be admitted.

So taking Joe's advice, I let the horse walk along, and Joe proceeded to tell me of Jack and Jacques.

"You may recall that at the old Rogers' place they had piles of stones in the doorway. One was in the form of a gigantic vase, and perhaps you'll remember that there

THE BROOK AND THE STONE WALL

was a big lot of them at the entrance to the side door in the driveway. Well, when they left the old place, some children first made the discovery that some of the remnants of rooms were piled full of stones. In the kitchen there was a rustic sink that was really quite good looking, sort of a spring walled in right in the house. But this ornamental use of stones took a new turn when they came here. There wasn't any picket fence at the old place. Stones in a dooryard in form of a pile or for vines and flowers to run over didn't seem so strange, but when 'the twins' took to fringing picket fences with stones, people first suspected that there was something besides shiftlessness. Got a kink in their upper story some time. But here comes Jacques now, with a big cane over his shoulder and a bag full of something hanging to it. You remember Jacques; he was the scholarly one."

"Guess I do; when I was tramping over hill to the academy, I thought Jacques was the original of the melancholic namesake of 'As You Like It.' And Jack, he was always grinning so that to this day he is mixed up in my mind with the famous Jumping Jack of my boyhood."

THE SPIRIT OF NATURE STUDY

By that time Jacques had come alongside the carriage. "How are you, Mr. Purple? You don't remember me, do you?" And as we shook hands over the carriage wheel, Jacques said to Joe, "Well, I ought to remember this here scamp. Guess he remembers how I chased him with a whip out of the old schoolhouse brook where he was fishing. Don't you remember it, hey?"

And so we shook and laughed—and laughed as only one can laugh at boyish escapades of long ago.

Then Jacques continued: "I suppose that was the run of your life. Your dad said, when I saw him a day or two later and was complaining about your fishing, said you could run, that he frightened you about to death one evening when you were looking for the spotted cow that didn't come to the yard at milking-time. Said he was afraid you'd tear yourself all to pieces getting over the wall and through the briers and bushes, but he'd a-laughed just the same if you had. But with me, that air brook and the wall was no laughing matter. You see, the boys were always a' bothering me a-fishin' in the brook and a-diggin' woodchucks out of the stone

THE BROOK AND THE STONE WALL

wall, tumbling it down and making no end o' trouble; I guess that's right; 'twas the division line between our farm and the Newton's. You remember that Mrs. Newton—Aunt Abby we all called her—died when her twin girls were born. That's before your time. You don't remember her. Nathaniel died when the girls were about eighteen years old; that left Jane and Julia to look after things. We tried to help 'em; Jane she was vixen; Jack liked her. Julia was the go-a-headitive one, sort o' bookish, too. Well, everything went ahead all right till the boys pulled the stone wall down and our cattle got out and the cabbages went in and our affairs went up."

Joe winked at me as I turned my head toward him. I knew there was something he wanted to tell me.

"But where have you been?" I inquired of Jacques. "And what have you got in your bag?"

"Well, this is such a beautiful Indian summer day that I thought I'd go down to the old shag-bark, just where the wall begins by the brook that was the boundary through the swamp, and the wall was just in the west side of our barn lot, between what they called the

THE SPIRIT OF NATURE STUDY

Morgan lot—Squire Newton bought it of old Deacon Morgan. Oh, but as to what I have in the bag, only a few walnuts from that tree, as I said, a few stones from the brook and the old wall; they're kind o' pretty, and Jack and I like them. I always bring home a few."

"What a fine Indian summer day this is!" I exclaimed. "I wish I lived out in the country."

"Yes, just the kind of time to take life easy—Jack and I do—it's the Indian summer of our life—might have been brighter, but it couldn't have been quieter nor more of a prophesy of winter. We rather like that. But winter isn't the worst season, after all; perhaps it's so with life. "

Then the conversation changed to other matters, chiefly reminiscent, and in a few minutes I shook hands with Jacques, poor old Jacques, at whom I had often laughed when I was a boy. "Remember me to Jack."

Then we drove on.

"I wanted to tell you," said Joe, "that Jane and Julia moved away years ago. They're at about the full allotment of three score and ten years and just as queer as they make 'em."

THE BROOK AND THE STONE WALL

And I thought of the strange vicissitudes of human life.

Higher up on the plane of life, I had looked down into the valley in an Indian summer haze. Things were not to be seen in perfect clearness, but the pull upon my heartstrings was not uncertain.

O you brook, of what varying territories are you the boundary? O you stone wall, what fields do you border? The variable landscapes, the whirligig of time!

Vista VI. By the Pond. Winter

A mouldering cottage stands half-way down the hill on the winding road, with its cobbly stones that make the farmer's horse go tiptoe and settle back into the breeching with arched back and four feet near together, and down which the youthful skaters so blithely glide. It makes a scene to delight the eye of the camerist. Four years ago I photographed it, the pond, the dam, the mill, the older mill race and the remnants of an ancient wheel. The aged miller, with

THE SPIRIT OF NATURE STUDY

his shining pate and glistening eyes, had said to me:

"I kin jes sort er reckerlect when my dad built this new mill, a little off the place where the old one was burned, all except the overshot wheel and some of the timbers and iron. You can see them now over yonder. Go to the West place a little farther on and get a photograph of old man Taylor and his wife; you won't get a chance to photograph them many years longer. Hiram was ninety-six last December; says he expects to live to be a hundred. And as to Polly, I guess she must be going on ninety-two. Good souls as ever were, but the boys do bother them. What critters boys are! Ya, ha, ha, ha! that's too funny for anything. I was mad and I laughed, too, till I cried. Say, young man, do you want to hear some good stories about them? Put your camera down there."

I set the camera by the window and took the inviting chair at the side of the door. Miller Darlington sat on a stone at the corner of the building. And after a hearty laugh of anticipation, said, "Little Jack Napes, the colored boy—he ought to be called Jack-a-napes, for he's always up to

THE BROOK AND THE STONE WALL

something—got a lot of the children together and went up to see the old folks the other day. He had the youngsters all hide near the house, saying to them, ‘See how I’ll fool Polly.’

“Gosh all hemlock, what idees do get into children’s heads! Thet air little imp of a nigger took a big stone from the wall in front of the house. Now right by the door is a barrel for rain water. We’d just had a big storm and it was full. The little scamp knocked at the door in the ordinary fashion and waited. Pretty soon he heard Polly hobbling along with the aid of her cane—the door between the hall and their settin’ room always squeaks—so’s he knew she was getting into the hall. He stood all ready, an’ just as she opened the door, he threw the stone into the barrel of water and skipped around the corner. The water splashed up all over Polly.

“Now them air boys thought that would be great fun, but Polly’s thinking turned out to be even greater fun. Her fust idea was that some one had knocked at the door, and as she opened it, he had slipped and fallen into the barrel. And she jumped to that idee, just as a lot of folks do, without a

THE SPIRIT OF NATURE STUDY

second thought, and you couldn't have driven it out of her head with a beetle and wedges. An' then she a give out a yell—regular panther-like, 'Help, help, man drowning! Help, help, come quick.' Hiram sat where you do, a-sunnin' himself, and I was in the mill, an' the first thing I heard was Hiram squeaking out, 'Darlington, D-a-r-lington, come here quick; Polly's a callin' thet there's some one drownin' out in the pond.' So I give the gate a pull to shet off the water, and scooted out to the floom, cause that's the most dangerous place, and Polly saw me—she had come out into the road. 'Come up here quick, here, here, up HERE,' she shouted. So I puffed up the hill and Hiram hobbled after, and Polly yelled, 'Come up HERE quick, man drownin', man drownin'.' 'An' well,' sez I to myself, near the top of the hill, as I mopped my head. 'I'll be gol darned, ef I haven't seen in my time several a' had cramps down in the pond, and a few gone under for good,' but, sez I, 'this here's the fust in all my time that there's been a man drownin' on top o' the hill.' Bime-by I got up there an' Polly explained, and, well, I had ter laugh—not as much as I wanted to, for I felt sorry

[THE BROOK AND THE STONE WALL

for poor old Polly; she's just a little losing her mind—but Hiram, he didn't have any sort a kindly feeling; he was mad—you blamed old fool—and then they had it just like two children. She sed as how he was older'n she was and he needn't crow over that, but finally they made up and they both had a laugh; guess it did them good, good old souls, and we all laughed, including the little nigger and the other young ones. So you go up and photograph them—they're two old children."

I laughed with the miller at the funny mistake and followed his advice. It was almost heartrending to see this old couple standing hand in hand in the path that leads to the door of the L, like two children trying to put on a picture expression. Hand in hand they had seen the joys and sorrows, the trials, the disappointments, the successes, all these little things that go to make up human life.

.
This was four years ago. For some unaccountable reason the plate proved worthless. It was cracked and did not develop well. I had some good photographs of the

THE SPIRIT OF NATURE STUDY

pond and mill, an especially good one of the brook where it joins the pond at the end of the stone wall on its banks, but I wanted a photograph of the dear old pair. I knocked at the door, then knocked again; I peered into the window of the ell; a child's voice called from the road, "Hey, mister, ain't nobody lives there—dead two years."

Polly died two years ago; three days later Hiram followed her. Hand in hand they lived; near together they died. Better than any photographic print is the picture in my memory where the stone wall and the brook, through briars and bloom, ravines and smiling fields, end at the quiet pond whose placid face reflects the stars. "The rest is silence."

THE END.

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